

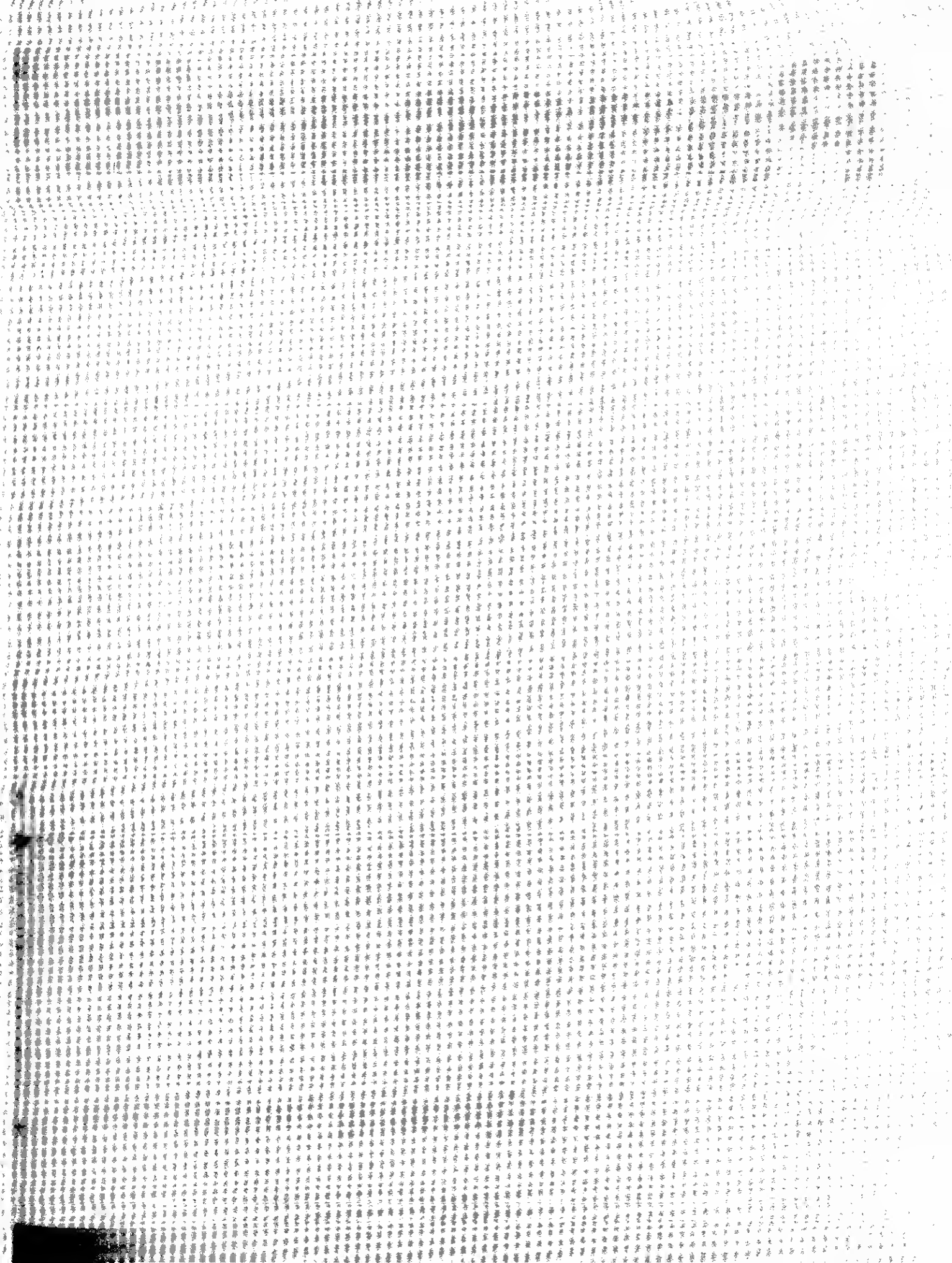
# **Panasonic**

**Colour Television**  
**TC-21T1Z**

## **Operating Instructions**

Please read these instructions completely before operating this set  
and retain it for future reference.

TQB620777



## ***Dear Panasonic Customer***

*Welcome to the Panasonic family of Customers.*

*We hope that you will have many years of enjoyment from your new colour television set.*

# Contents

<b>Before operating this set</b> .....	<b>6</b>
<b>Battery Installation and Replacement</b> .....	<b>7</b>
<b>VCR Mode Selection</b> .....	<b>8</b>
<b>Location of Controls for TV Set</b> .....	<b>10</b>
<b>Location of Controls for Remote Control</b>	
Upper part on the Remote Control .....	12
Lower part on the Remote Control .....	14
<b>Location of Terminals</b> .....	<b>16</b>
<b>How to Connect an Aerial</b> .....	<b>18</b>
<b>Automatic Turn-off Function</b> .....	<b>19</b>
<b>Connection</b>	
Pattern 1: Via the "AV1" S-Video and Audio Terminals .....	20
2: Via the "AV1" Video and Audio Terminals .....	22
3: Via the "AV2" Video and Audio Terminals .....	24
4: Via the "Monitor Out" Terminals .....	26
<b>Tuning Procedure (Automatic Search)</b> .....	<b>28</b>
<b>Tuning Procedure (Manual Search)</b> .....	<b>30</b>
<b>Fine Tuning Operation</b> .....	<b>32</b>
<b>Tuning the TV set to the VCR</b> .....	<b>34</b>
<b>Programme Name Writing Operation</b> .....	<b>36</b>
<b>Programme Number Skip Operation</b> .....	<b>38</b>

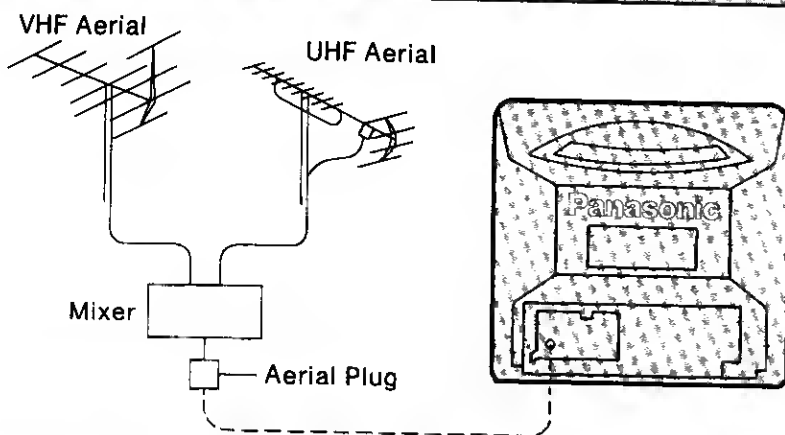
# Contents

<b>Basic Operation on the TV Set</b> .....	<b>40</b>
<b>General Operation on the TV Set</b> .....	<b>42</b>
<b>Basic Operation on the Remote Controller</b> .....	<b>46</b>
<b>Picture Menu Operation</b>	
Menu Select Operation .....	48
To Adjust the Picture Menu .....	49
<b>General Operation on the Remote Controller</b> .....	<b>50</b>
<b>Operation for VCR</b> .....	<b>54</b>
<b>Warnings and Cautions</b> .....	<b>56</b>
<b>Troubleshooting</b> .....	<b>57</b>
<b>Specifications</b> .....	<b>58</b>

# Before operating this set

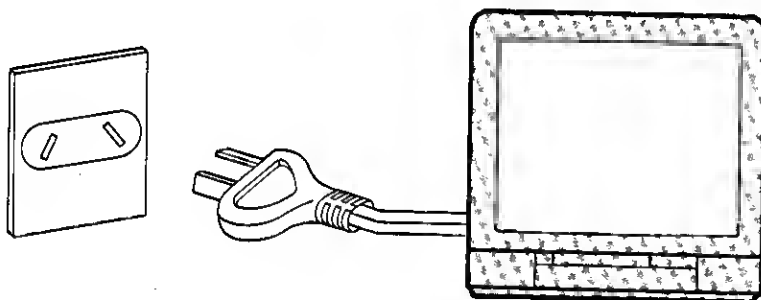
## Preparations

### Connect the Aerial Cable to the RF In Terminal



**How to connect an Aerial**  
For connection details refer to page 18.

### Connect the Plug to the wall outlet



**Connect the AC Plug to AC Outlet**

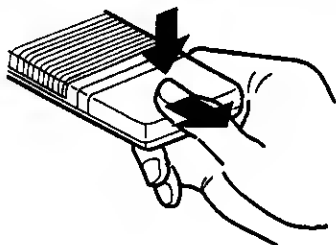
**Note:**  
Remove the plug from the wall outlet when the TV set is not used for a prolonged period of time.

For Warnings and Cautions details, refer to page 56.

# Battery Installation and Replacement

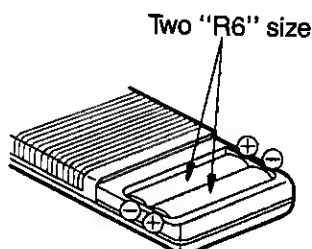
**Batteries: Use two "R6" size alkaline batteries**

**1**



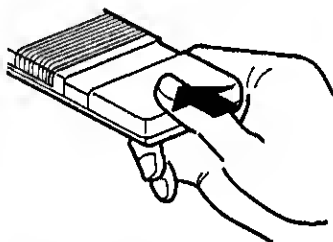
**Open the cover.**  
Push down stopper and remove the cover.

**2**



**Replace the batteries.**  
Insert the batteries with the correct polarity as indicated by the "+" and "-" symbols.

**3**



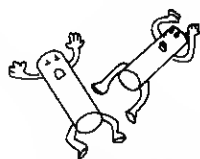
**Replace the cover.**

Do not use rechargeable (Ni-Cd) batteries.  
They are partially different in shape and performance and may fail to ensure the desired function.

## Battery precautions

The incorrect use of batteries can cause electrolyte leakage which will corrode the remote control transmitter or cause the batteries to burst. The following precautions must be observed carefully.

Old Batteries



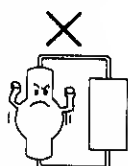
Replace both batteries at the same time.  
Dispose of them immediately.

New Batteries



Don't mix battery types  
(alkaline with carbon zinc, etc.)

Don't



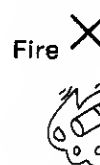
Recharge



Short-circuit

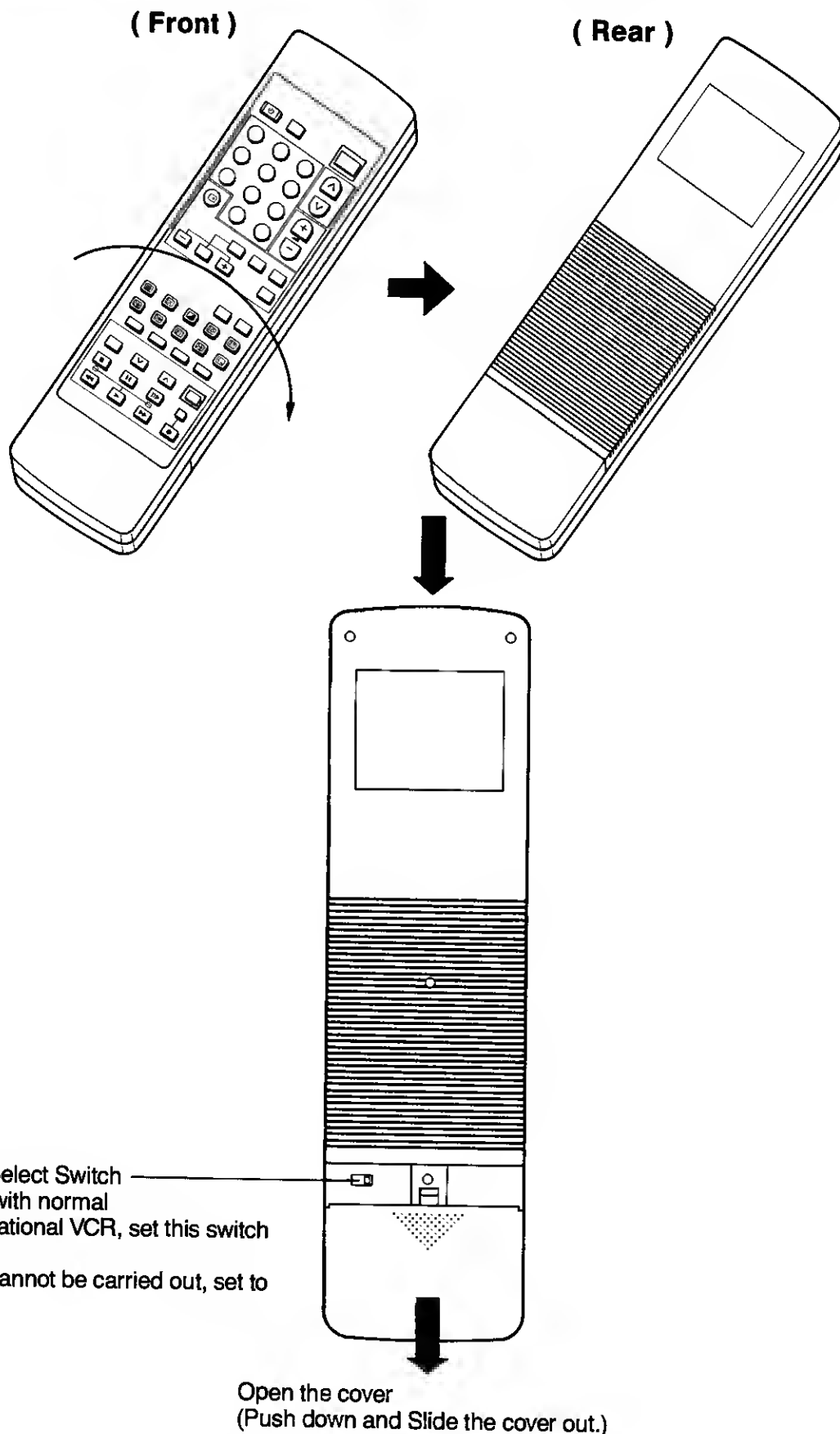


Disassemble



Heat or Burn

# VCR Mode Selection

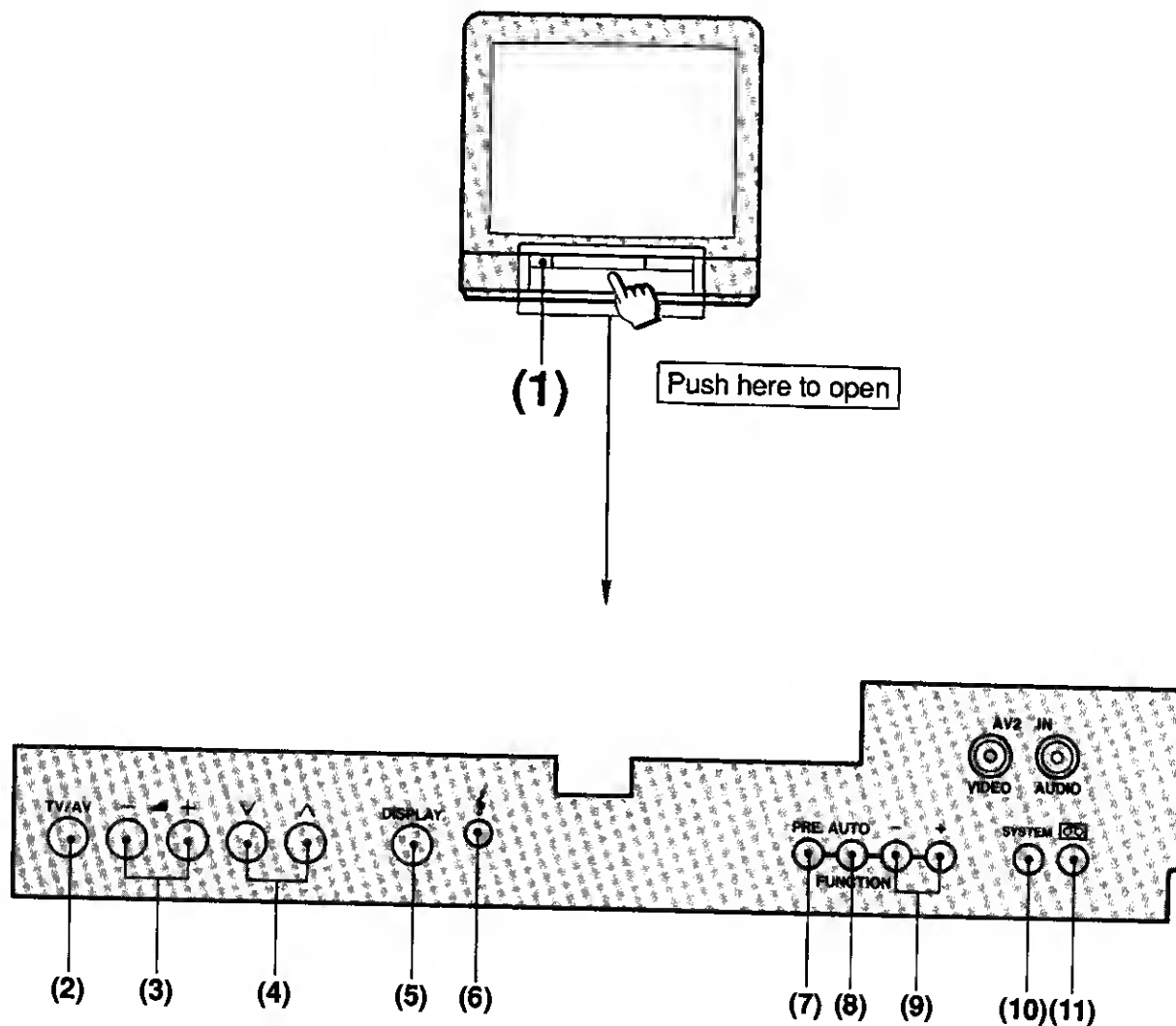






# Location of Controls for TV set

## Controls panels

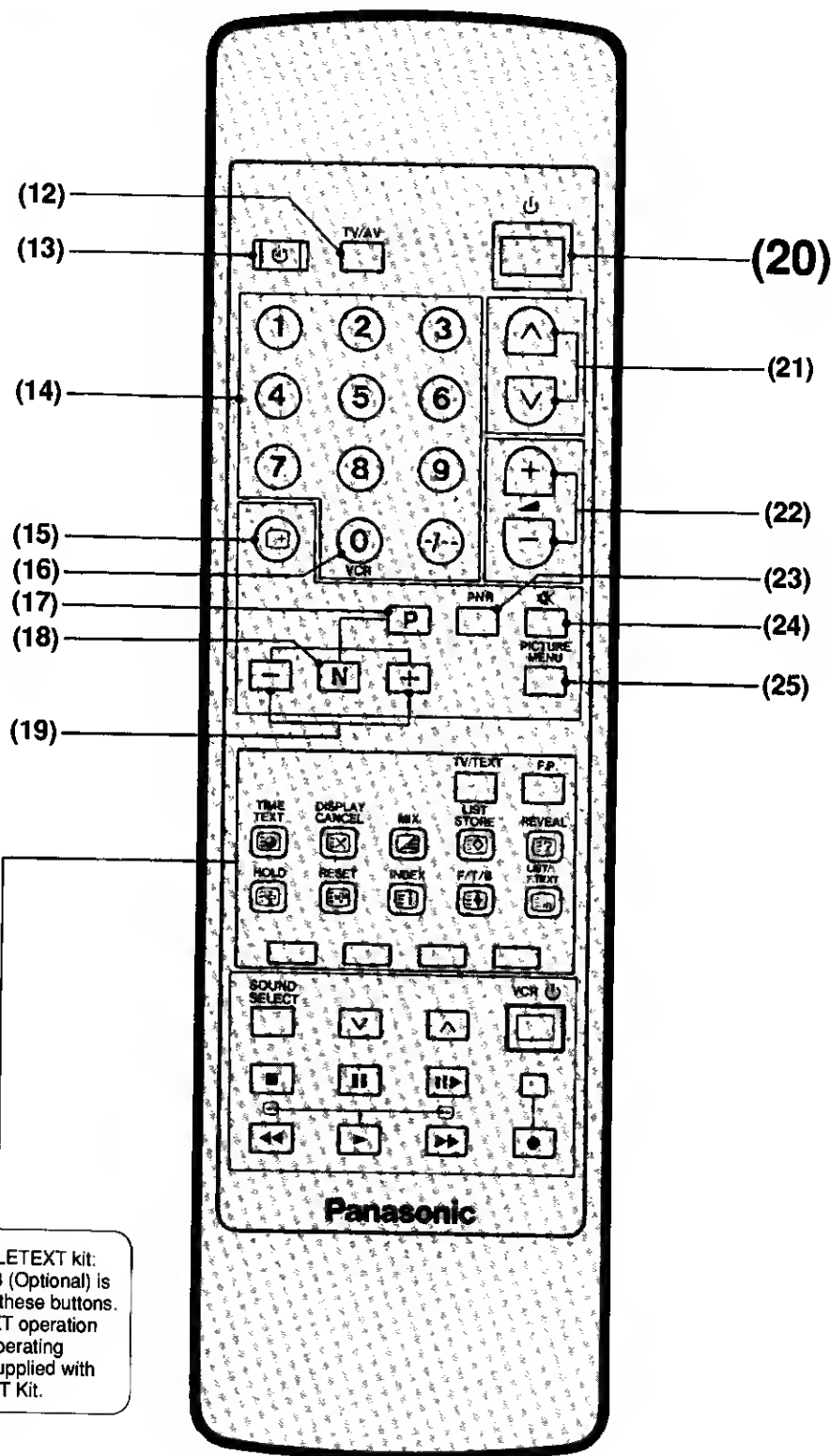


## Location of Controls for TV set

No.	Description
(1)	Power Switch
(2)	TV/AV Selection Button
(3)	Volume Up and Down Buttons
(4)	Programme Number Up and Down Buttons
(5)	Display Button
(6)	Tone Control
(7)	Preset Button
(8)	Auto/Function Button
(9)	Level Adjust Buttons
(10)	System Selection Button
(11)	Game Position Button

# Location of Controls for Remote Control

## Upper part on the Remote Control



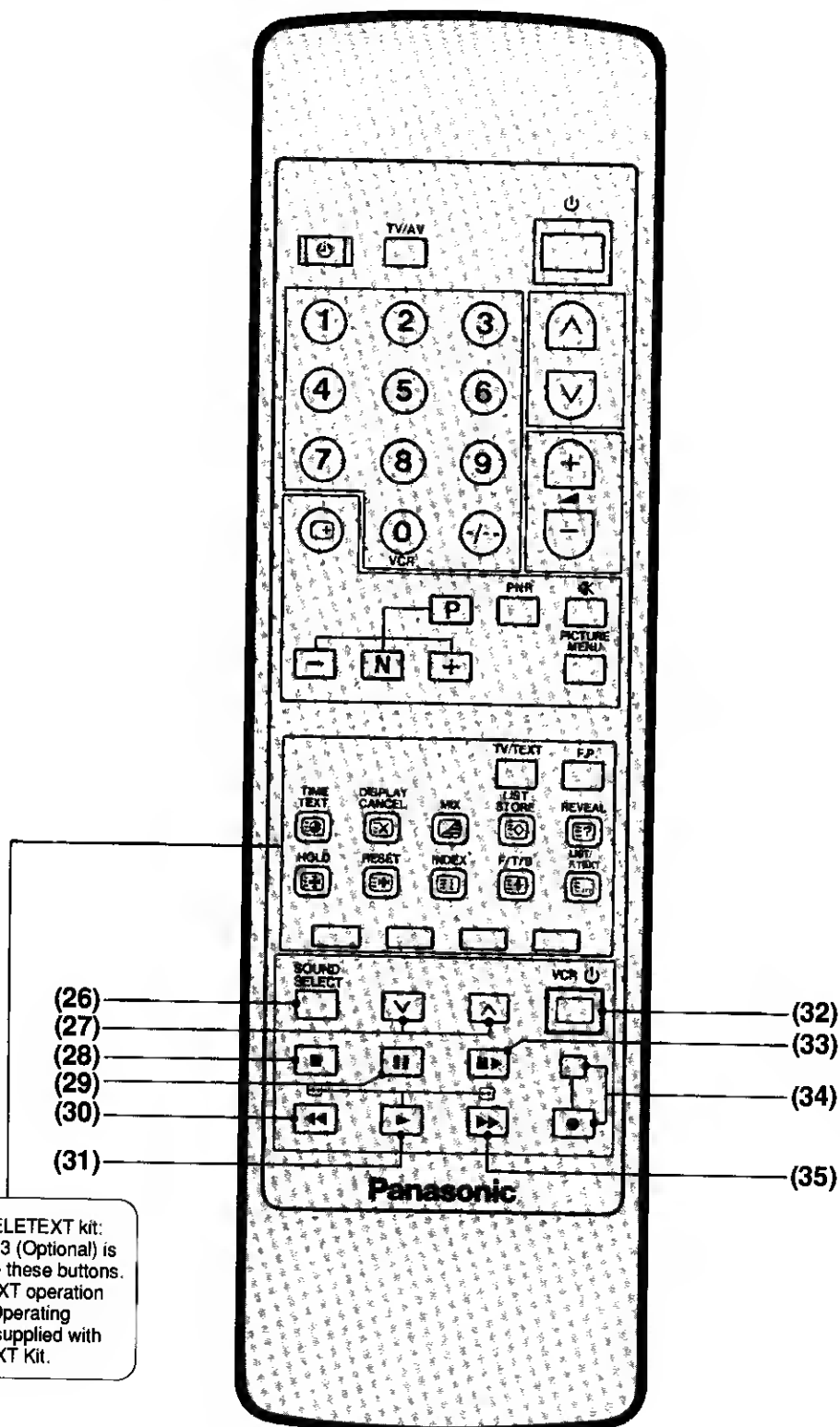
When the TELETEXT kit: Model TY-TA3 (Optional) is adapted, use these buttons. For TELETEXT operation refer to the Operating Instructions supplied with the TELETEXT Kit.

## Location of Controls for Remote Control

No.	Description
(12)	TV/AV Selection Button
(13)	Off-Timer Button
(14)	Direct Programme Number Selection Buttons
(15)	Recall Button
(16)	O/VCR Button
(17)	Picture Function Button
(18)	Normalisation Button
(19)	Function level Up and Down Buttons
(20)	Power (Stand-by) Button
(21)	Programme Number Up and Down Buttons
(22)	Volume Up and Down Buttons
(23)	Picture Noise Reduction Button
(24)	Mute Button
(25)	Picture Menu Button

# Location of Controls for Remote Control

## Lower part on the Remote Control



## Location of Controls for Remote Control

No.	Description
-----	-------------

(26)	Sound Selection Button for VCR
------	--------------------------------

(27)	Programme Number Up and Down Buttons for VCR
------	--

(28)	Stop Button
------	-------------

(29)	Pause Still Button
------	--------------------

(30)	Rewind/Review Button
------	----------------------

(31)	Play Button
------	-------------

(32)	VCR Power Button
------	------------------

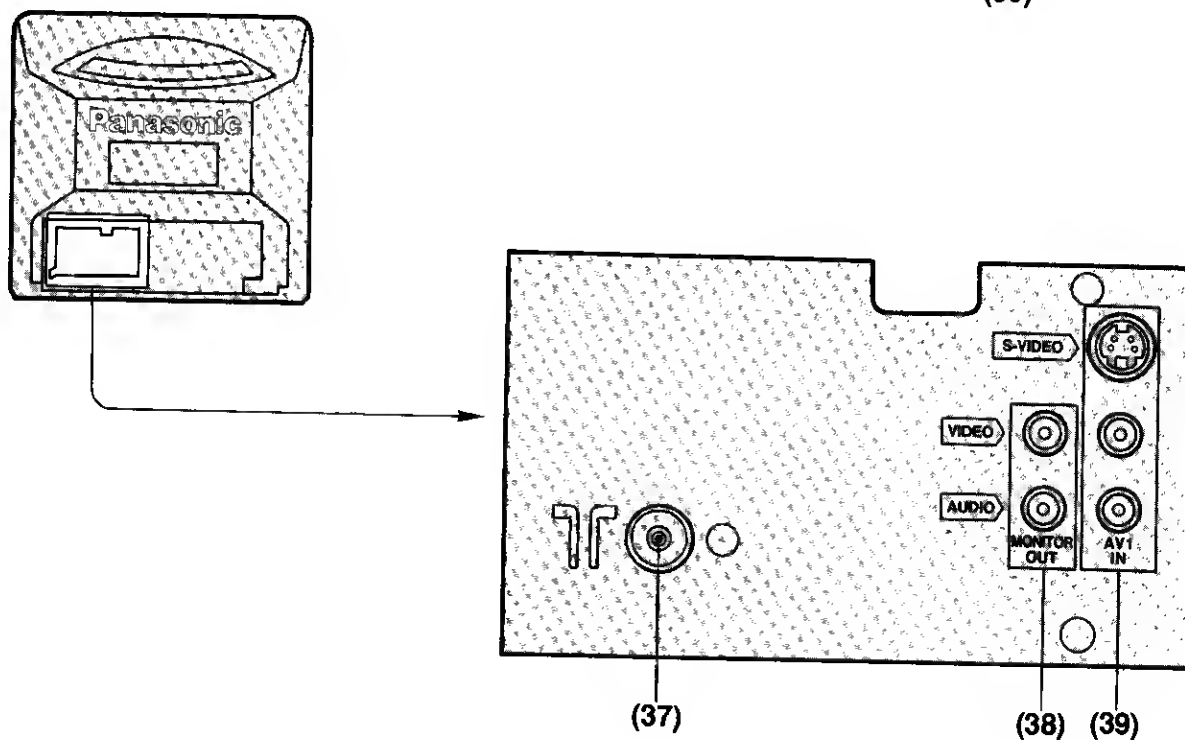
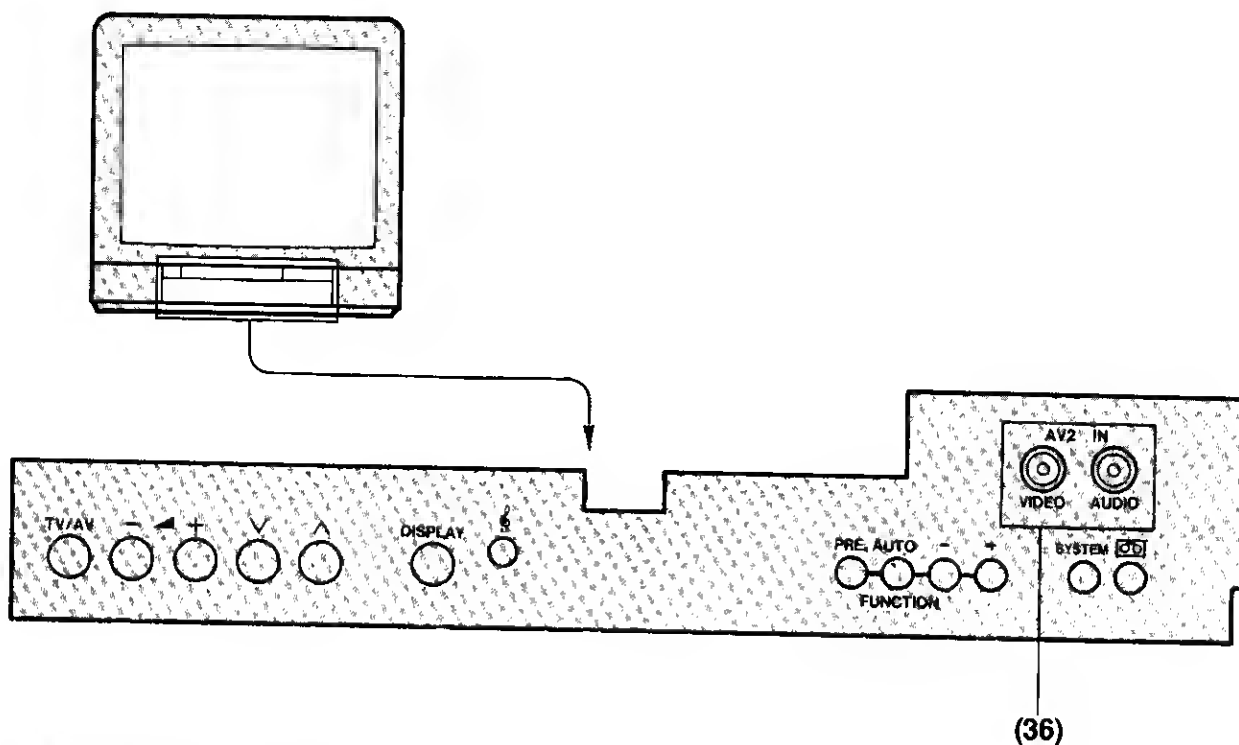
(33)	Still Advance Button
------	----------------------

(34)	Record Buttons
------	----------------

(35)	Fast Forward Button
------	---------------------

# Location of Terminals

## Location of Front and Rear Terminals





## Location of Terminals

No.	Description
-----	-------------

(36)	AV 2 Input Terminals
------	----------------------

(37)	Aerial Terminal
------	-----------------

(38)	Monitor Out Terminals
------	-----------------------

(39)	AV 1 Input Terminals
------	----------------------

# How to Connect an Aerial

To obtain the best quality picture and sound, an Aerial, the correct cable (75 Ohm coaxial) and the correct terminating plug will be required.

If a communal Aerial system is used, you may require the correct connection cable and plug between the wall Aerial socket and your television receiver.

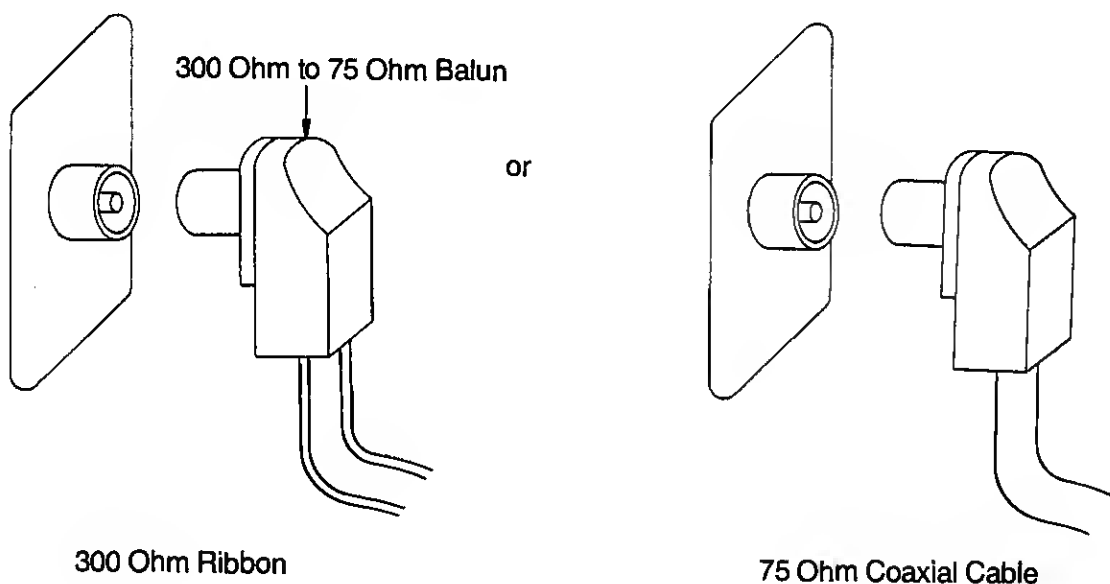
Your local Television Service Agent or Dealer may be able to assist you in obtaining the correct Aerial system for your particular area and any accessories required.

Any matters regarding Aerial installation, upgrading of existing systems or accessories required, and the costs incurred, are the responsibility of the customer.

**Note:**

If your existing Aerial system uses 300 Ohm ribbon cable you will require to use a 300 Ohm to 75 Ohm Balun.

See below.



## Helpful Hint

### VCR Operation

If during the operation in "CUE" or "REVIEW" Mode, a Coloured Screen appears on the television, the "Picture Noise Reduction" Function needs to be set "On" (PNR ON) by pushing the "PNR" Button on the Remote Control Handset.

## 注意

当您使用录像机的“快进检索”或“到带检索”功能时，有时可能会出现背景彩色屏幕(蓝色)。如有发生此现象，请按遥控器上的“PNR”钮，将“画面杂波减少”功能“启动”。

## تشغيل المسجل الفيديوي

### نصيحة مفيدة

إذا ظهرت شاشة ملونة على التلفزيون خلال التشغيل بحالة التأشير «CUE» أو الاستعراض «REVIEW»، سيتطلب ضبط وظيفة «خفض ضوضاء الصورة» (PNR) على موضع التوصيل «On» وذلك بكبس زر (PNR) الموجود على الوحدة اليدوية لمسيطر التحكم عن بعد.

## طرز کار ویدئو

### راهنمای مفید

اگر در حالت حرکت سریع نوار «CUE» یا «REVIEW» یک زمینه، رنگی روی صفحه تلویزیون ظاهر شد، عمل «Picture Noise Reduction» یا «کاهش نارسائی صدا» را برای تنظیم یا فشار دکمه «PNR» روی دستگاه کنترل از راه دور، بروی روشن «On» بگذارید.

## Операция ВМ

### Полезный совет

Если во время работы в режим «CUE» (Быстрый просмотр вперед) или «REVIEW» (Быстрый просмотр назад) на экране телевизора появляется Цветовой фон, то следует установить функцию «Уменьшение помех на изображении» в положение «ВКЛ.» (PNR ON). Для этого надо нажать кнопку «PNR» на пульте дистанционного управления.

## Pożyteczna rada

### Czynności magnetowidu

Jeśli w czasie czynności przeglądu taśmy do przodu («CUE») lub do tyłu («REVIEW») na ekranie ukaże się kolorowy obraz, należy włączyć «Układ redukcji szumów obrazu» (PNR ON) poprzez naciśnięcie przycisku «PNR» na nadajniku zdalnego sterowania.

## Sugerencia Práctica

### Operación de VGC

Si durante la operación en la modalidad "CUE" (Localización progresiva) o "REVIEW" (Localización regresiva) aparece en la pantalla del televisor un color azul, la Función de "Reducción de Ruido de Imagen" debe activarse, pulsando el Botón "PNR" de su Aparato de Control Remoto.

## Sugestão Útil

### Operação do Aparelho de Vídeo Cassete (VCR)

Se durante a operação no modo "CUE" ou "REVIEW" aparecer na televisão uma Tela Colorida, torna-se necessário ligar a Função "Picture Noise Reduction" (PNR ON) Pressionando a Tecla "PNR" do Dispositivo Manual de Controle Remoto.



# Automatic Turn-off Function

## Noise Timer

If the set is not switched off when the TV station stops transmitting.

It will automatically go to stand-by condition after 30 minutes.

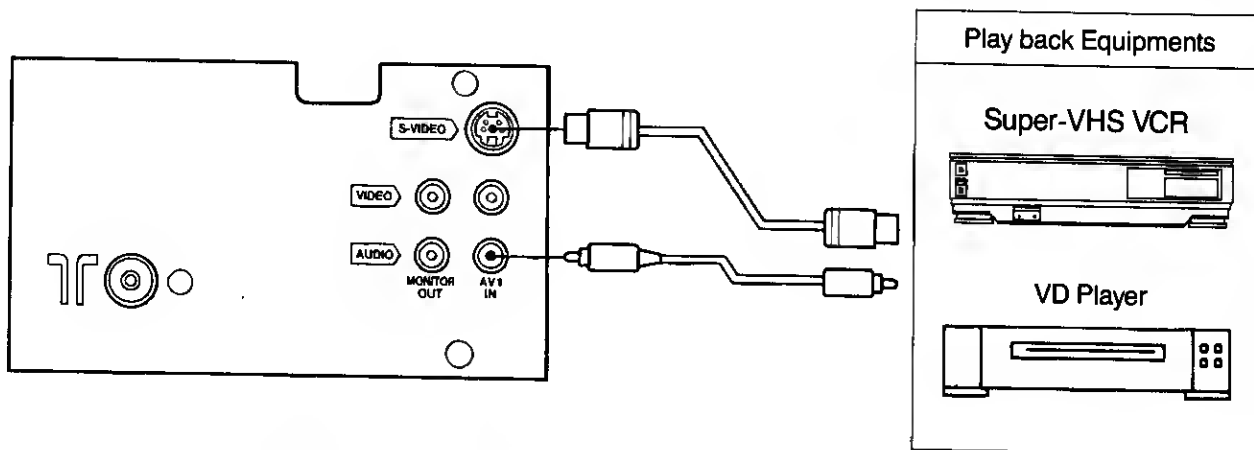
**Note:**

This function will not operate when the Television receiver is on AV mode.

# Connection

## Pattern 1: Via the "AV1" S-Video and Audio Terminals

Connect the "AV1" (S-Video and Audio) Terminals and Other Equipments as follows.

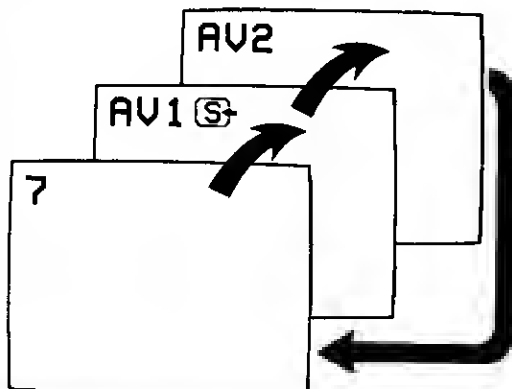


## AV1 Select Operation on the TV set

1.



Select the "AV1" mode by pushing this button, you can sequentially select TV and two AV modes (AV1 and AV2), as shown below. Selecting mode will appear on the top left of the screen.



### Note:

When the S-Video cable is connected to AV1 (S-Video) Terminal, the "S-Video" symbol will be displayed on the screen as shown left.

2.



Push the "PLAY" Button on the Connected Equipment.

# Connection

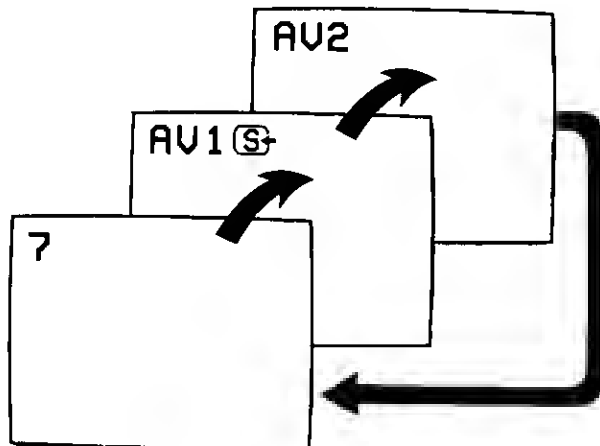
## AV1 Select Operation on the Remote Controller

1.



Push the "TV/AV" Button on the Remote Controller.  
Then last selected AV mode will be displayed on the screen.

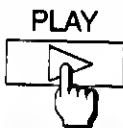
Select the "AV1" mode by pushing this button, you can sequentially select TV and two AV modes, as shown below.



### Note:

When the S-Video cable is connected to AV1 (S-Video) Terminal, the "S-Video" symbol will be displayed on the screen as shown left.

2.



Push the "PLAY" Button on the Connected Equipment.

## Helpful Hint

SYSTEM



### System Button

On the AV mode, if the clear picture cannot be obtained even when the AV signal is received, push the System Button repeatedly until the optimum image can be produced.

For operation details, refer to "System Select Operation" on page 41.

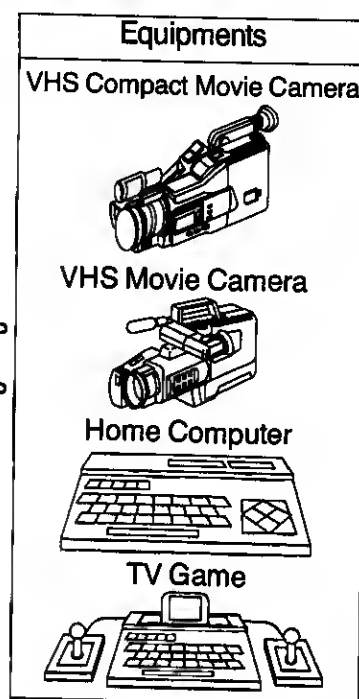
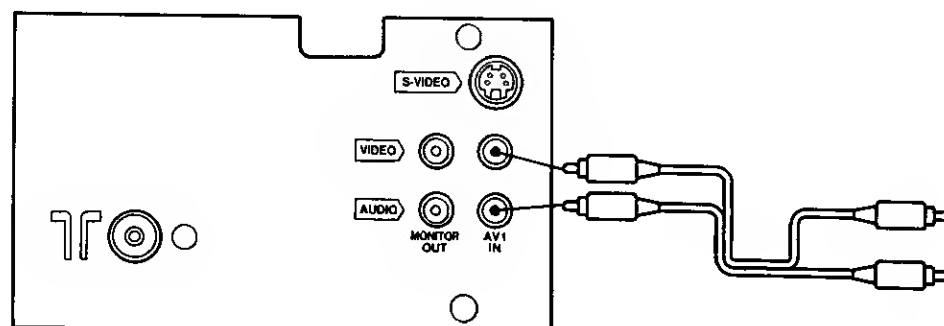
### Note:

- (1) When AV mode (AV1 and AV2) is selected and the selected AV mode has no AV signal, the On-screen will be changed from Black out picture to Colour back picture.
- (2) When the played back picture may be unstable, then by pushing "Play" Button you can obtain the clear picture.
- (3) When the S-Video cable is connected to S-Video Terminal, Input Terminal will be changed from Video to S-Video Terminal.

# Connection

## Pattern 2: Via the "AV1" Video and Audio Terminals

Connect the "AV1" (Video and Audio) Terminals and Other Equipments as follows.



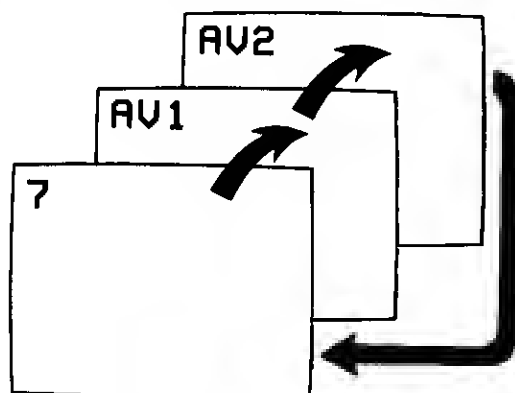
## AV1 Select Operation on the TV set

1.

TV/AV



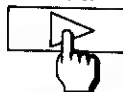
Select the "AV1" mode by pushing this button, you can sequentially select TV and two AV modes (AV1 and AV2), as shown below.



Selecting mode will appear on the top left of the screen.

2.

PLAY



Push the "PLAY" Button on the Connected Equipment.



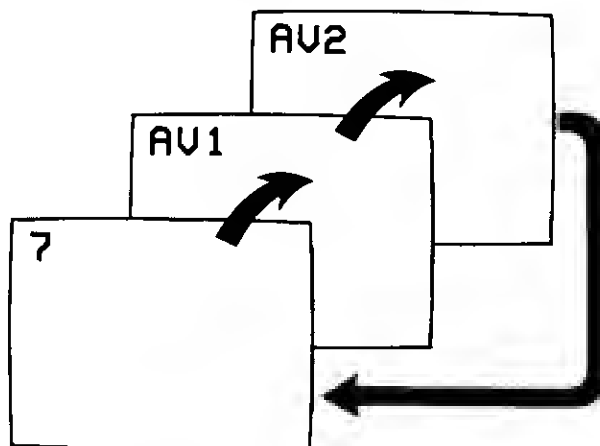
## AV1 Select Operation on the Remote Controller

1.



Push the "TV/AV" Button on the Remote Controller.  
Then last selected AV mode will be displayed on the screen.

Select the "AV1" mode by pushing this button, you can sequentially select TV and two AV modes, as shown below.



2.



Push the "PLAY" Button on the Connected Equipment.

## Helpful Hint

SYSTEM



### System Button

On the AV mode, if the clear picture cannot be obtained even when the AV signal is received, push the System Button repeatedly until the optimum image can be produced.

For operation details, refer to "System Select Operation" on page 41.

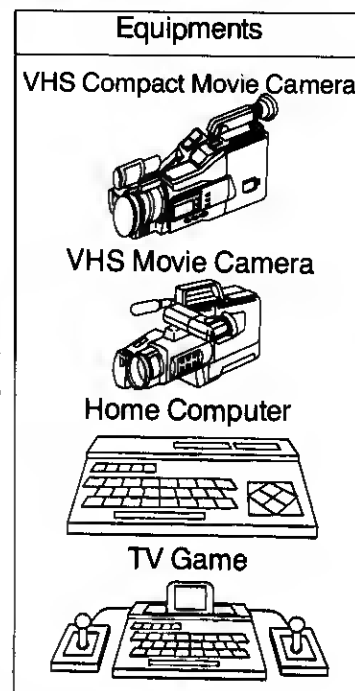
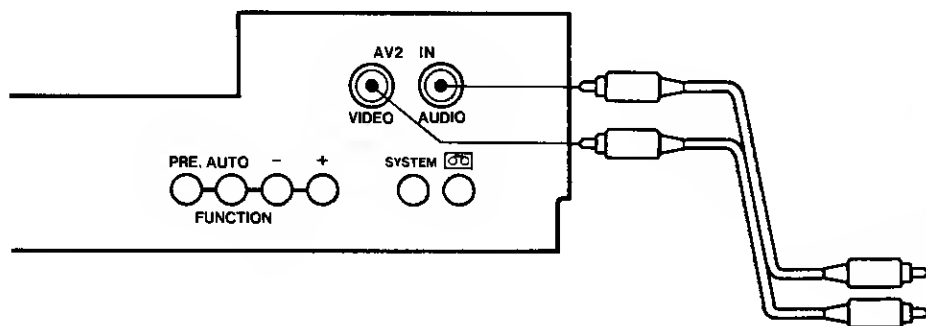
### Note:

- (1) When AV mode (AV1 and AV2) is selected and the selected AV mode has no AV signal, the On-screen will be changed from Black out picture to Colour back picture.
- (2) When the played back picture may be unstable, then by pushing "Play" Button you can obtain the clear picture.
- (3) When the S-Video cable is connected to S-Video Terminal, Input Terminal will be changed from Video to S-Video Terminal.

# Connection

## Pattern 3: Via the "AV2" Video and Audio Terminals

Connect the "AV2" (Video and Audio) Terminals and Other Equipments as follows.



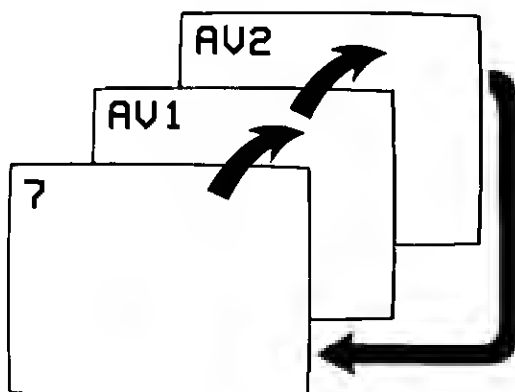
## AV2 Select Operation on the TV set

1.

TV/AV



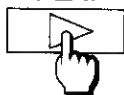
Select the "AV2" mode by pushing this button, you can sequentially select TV and two AV modes (AV1 and AV2), as shown below.



Selecting mode will appear on the top left of the screen.

2.

PLAY



Push the "PLAY" Button on the Connected Equipment.

# Connection

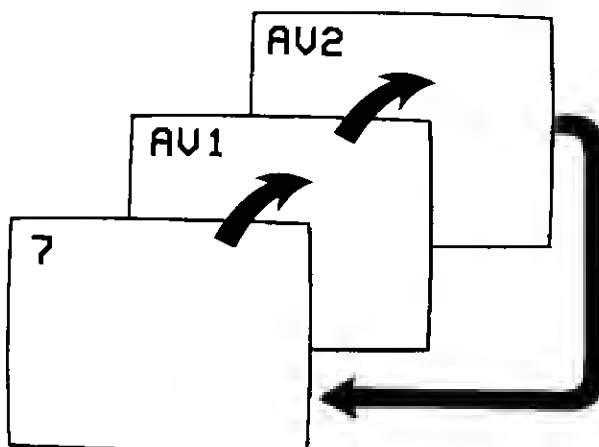
## AV2 Select Operation on the Remote Controller

1.

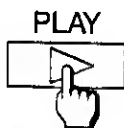


Push the "TV/AV" Button on the Remote Controller.  
Then last selected AV mode will be displayed on the screen.

Select the "AV2" mode by pushing this button, you can sequentially select TV and two AV modes, as shown below.



2.



Push the "PLAY" Button on the Connected Equipment.

## Helpful Hint

SYSTEM



### System Button

On the AV mode, if the clear picture cannot be obtained even when the AV signal is received, push the System Button repeatedly until the optimum image can be produced.

For operation details, refer to "System Select Operation" on page 41.

### Note:

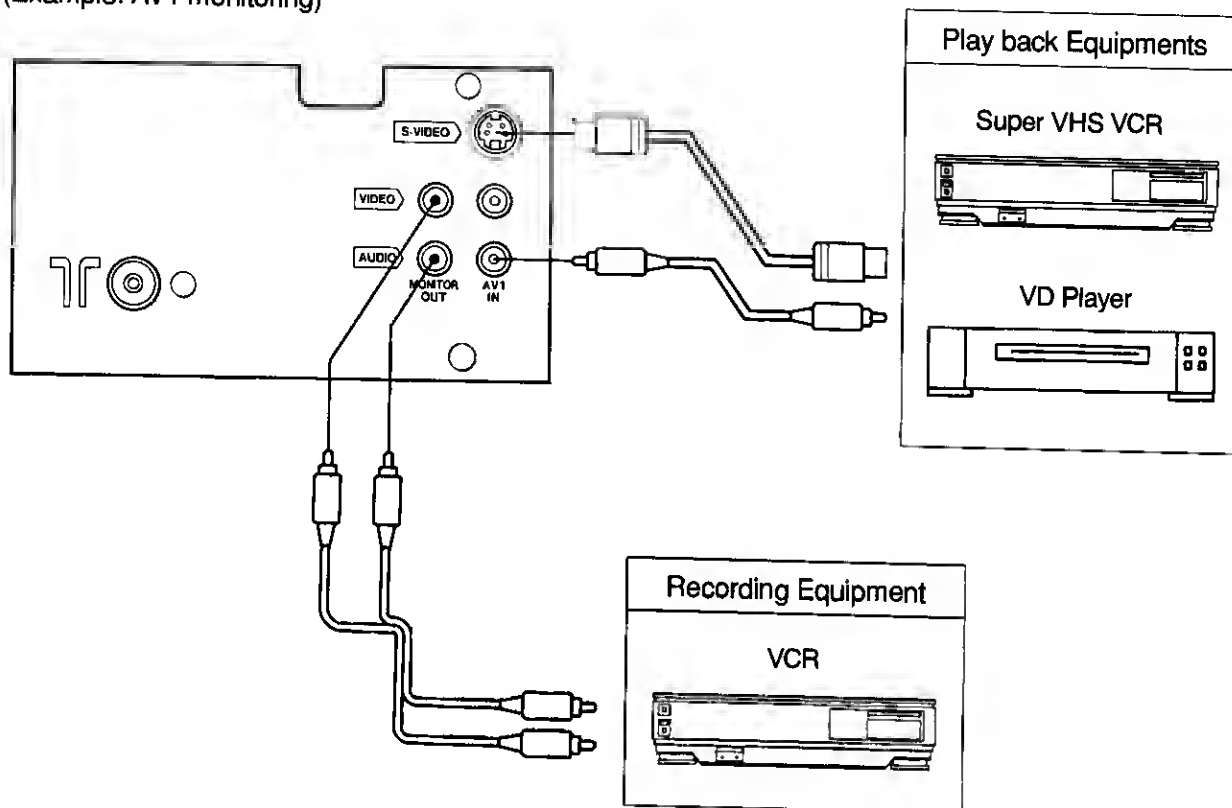
- (1) When AV mode (AV1 and AV2) is selected and the selected AV mode has no AV signal, the On-screen will be changed from Black out picture to Colour back picture.
- (2) When the played back picture may be unstable, then by pushing "Play" Button you can obtain the clear picture.

# Connection

## Pattern 4: Via the "Monitor Out" Terminals

Connect the "Playback" Equipment and "Recording" Equipment via the TV set as follows.

(Example: AV1 monitoring)



"Monitor Out" Terminals contain signals which are on the TV screen at that time, e.g. TV programmes or signals from AV1 or AV2 input.

## Operation

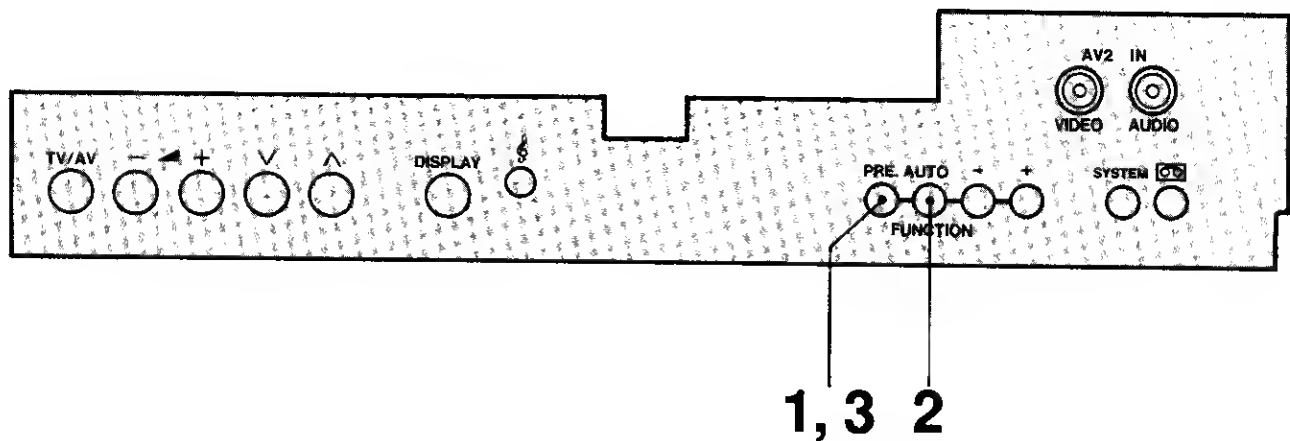
1. Select the desired AV mode.  
In this case, select the AV1 (S-VIDEO) mode.  
For Operation details refer to page 20 to 21.
2. Push the "PLAY" Button on the Connected Equipment.

### Note:

Never connect the same video recorder to both the VIDEO IN and VIDEO OUT Terminals on this TV set, as this would cause malfunction and could lead to accidents.



# Tuning Procedure (Automatic Search)



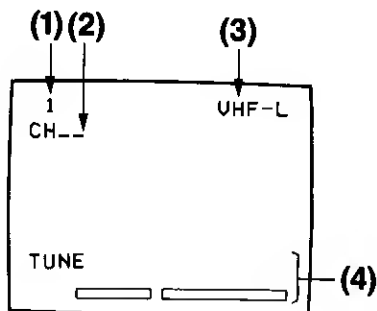
This TV set will search automatically through all of the VHF and UHF bands.  
After completion, the best tuning position is automatically memorized on each Programme Number.

(TV set must be turned on.)

1.



Push the "PRE." (PRESET) Button until the on-screen display appears as shown below.



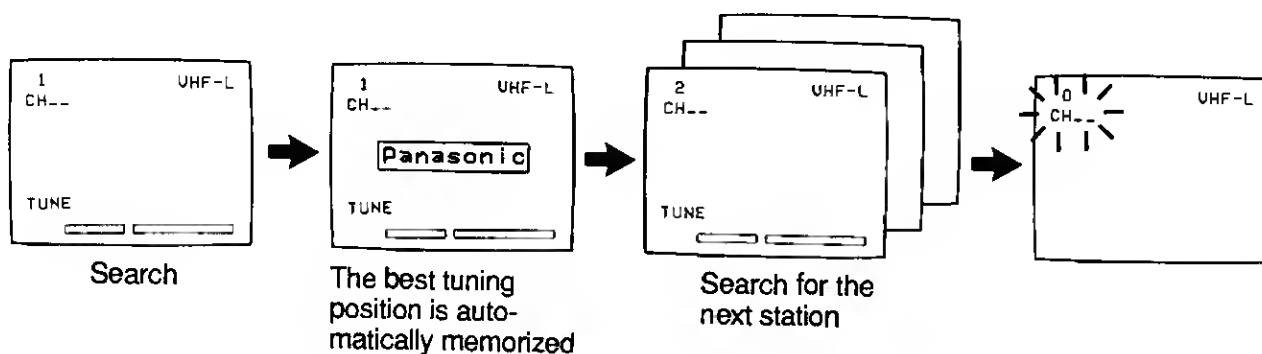
- (1) Programme Position Number
- (2) Name Write
- (3) Band
- (4) Tuning bar

## Tuning Procedure (Automatic Search)

2.



Push the "Auto Function" Button.



3.

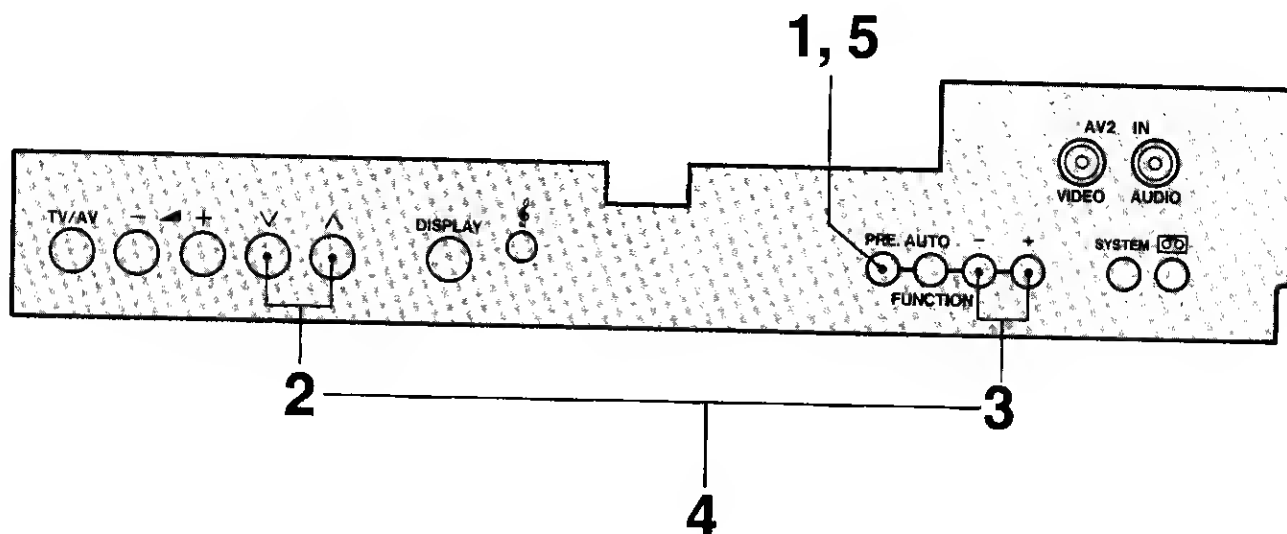


Return the TV set to the normal operation mode by pushing this button twice.  
A maximum of 30 channels can be programmed.

### Helpful Hint

- (1) If you need the station name on the screen display together with programme position, for operation details, refer to the Name Writing operation on page 36 to 37.
- (2) After all stations are tuned, Push the Programme Number "Up" Button to confirm the tuning condition for each Programme Position, If Programme Position is undesired, it possible to skip the Programme Number, refer to the Programme Number skip operation on page 38 to 39.

# Tuning Procedure (Manual Search)



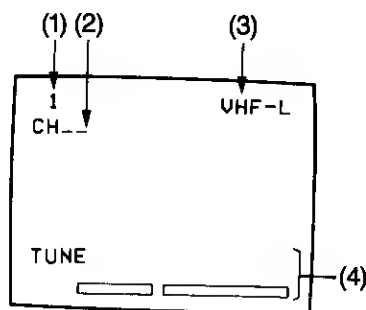
In case only few TV broadcastings can be received in your area, this Manual Search operation may be preferable.

(TV set must be turned on.)

1.



Push the "PRE." (PRESET) Button until the on-screen display appears as shown below.

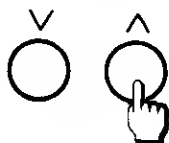


- (1) Programme Position Number
- (2) Name Write
- (3) Band
- (4) Tuning bar



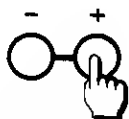
# Tuning Procedure (Manual Search)

2.



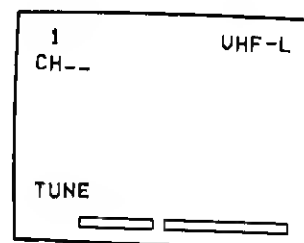
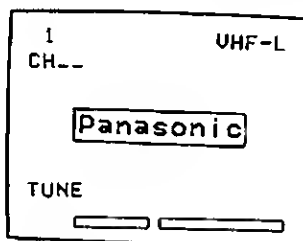
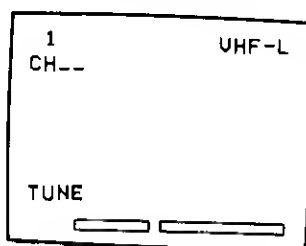
Push either the programme Number Up “^” or Down “V” Button to select the desired programme number on which you want to tune the TV station of your choice.

3.



Upward Search

Push either the Level Adjust Up “+” or Down “-” Button, the TV station broadcasting on the next higher or lower frequency will be automatically tuned and memorized.



If an undesired TV station is received, push the same button again until the desired TV station is tuned.

4.

Repeat steps 2 and 3 to tune all the available TV stations on the remaining programme numbers.

**Note:**

Ensure that a new programme number is set (Step 2) before tuning the next station.

5.

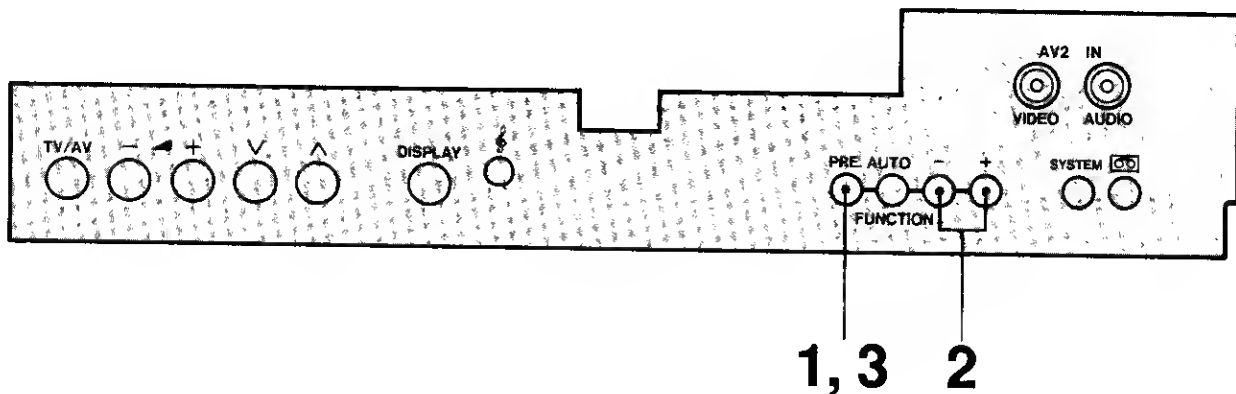


Return the TV set to the normal operation mode by pushing this button 3 times.  
A maximum of 30 channels can be programmed.

## Helpful Hint

- (1) If you need the station name on the screen display together with programme position, for operation details, refer to the Name Writing operation on page 36 to 37.
- (2) After all stations are tuned, Push the Programme Number “Up” Button to confirm the tuning condition for each Programme Position, If Programme Position is undesired, it possible to skip the Programme Number, refer to the Programme Number skip operation on page 38 to 39.

# Fine Tuning Operation



Under normal reception conditions this function is not used. However, in areas of poor reception or constant interference, a slight adjustment of the tuning may improve the picture and sound quality.

(TV set must be turned on.)

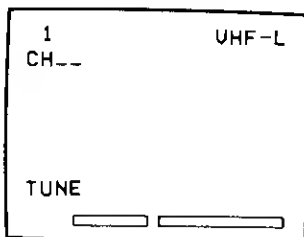
1.

PRE.

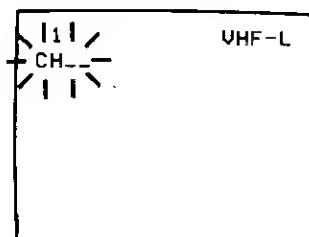


Push the "PRE." (PRESET) Button third times.  
The on-screen display will be changed as shown below.

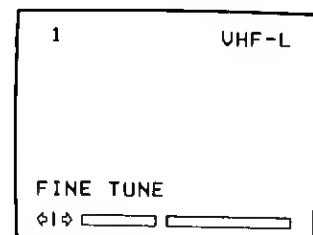
First push



Second push

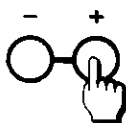


Third push



## Fine Tuning Operation

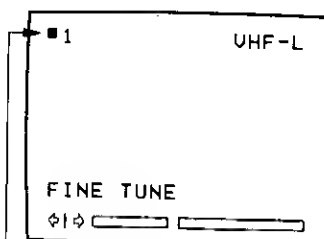
2.



Push and hold the Level Adjust Up “+” or Down “-” Button until picture and sound are improved.

When the above fine tuning operation has been performed, the AFC function is deactivated, so that the “■” symbol appears to the left of the Programme Number.

The on-screen display will be appeared as shown below.



AFC OFF symbol

3.



Return the TV set to the normal operation mode by pushing this button.

## Fine Tuning cancel operation

Activating the AFC (Automatic Frequency Control) Function.

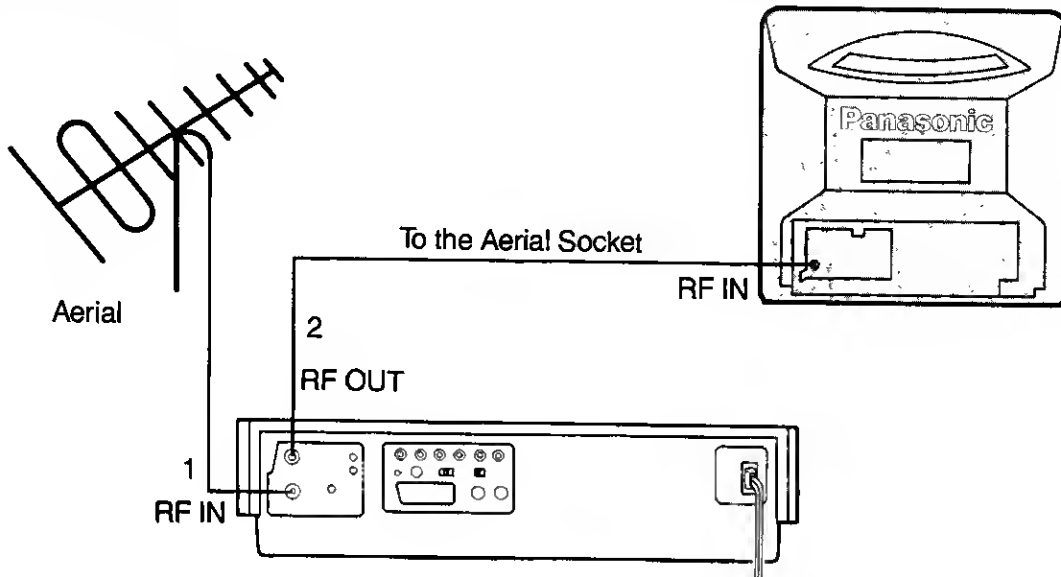
If you later want to reset this Programme Number to the automatically tuned condition with activated AFC function.

- (1) Select the programme position conditioned on the AFC off position.
- (2) Operate the Tuning procedure (Manual Search), refer to page 30 to 31.

# Tuning the TV set to the VCR

## Connection

1. Connect the external aerial to the RF Input Socket on the VCR.
2. Connect the aerial terminal on the TV set to the RF Output Socket on the VCR with the supplied DIN-DIN Coaxial Cable.



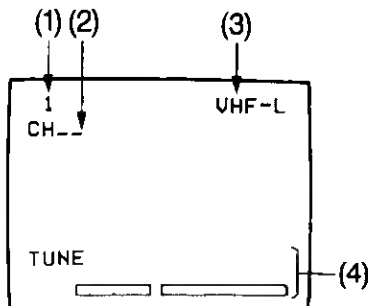
The adjustments described on this page are not necessary, if the VCR is connected to the TV set via the Video/Audio output sockets.

1.

PRE.



Push the "PRE." (PRESET) Button on the TV set until the on-screen display appears as shown below.



- (1) Programme Position Number
- (2) Name Write
- (3) Band
- (4) Tuning bar

2.



Select the "VCR" position by using "0/VCR" Button on the Remote Controller.

## Tuning the TV set to the VCR

3.

Push the VCR On/Off Button on the VCR to turn the VCR On.

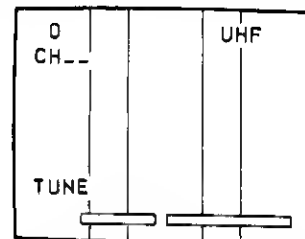
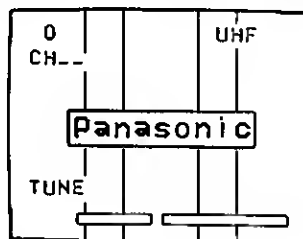
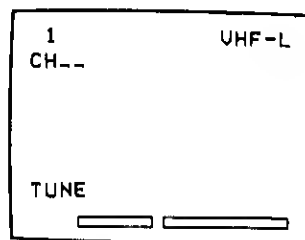
4.

Set the "Test Signal" Switch to "TEST" position on the VCR.

5.



Push the MANU. Down " - " Button on the TV set, the TV station broadcasting on the UHF will be automatically tuned and memorized. Confirm on the TV set that the received test pattern is as shown.



**Note:** This test pattern is used on the Panasonic/National VCR only.

6.

PRE.



Return the TV set to the normal operation mode by pushing this button 3 times.

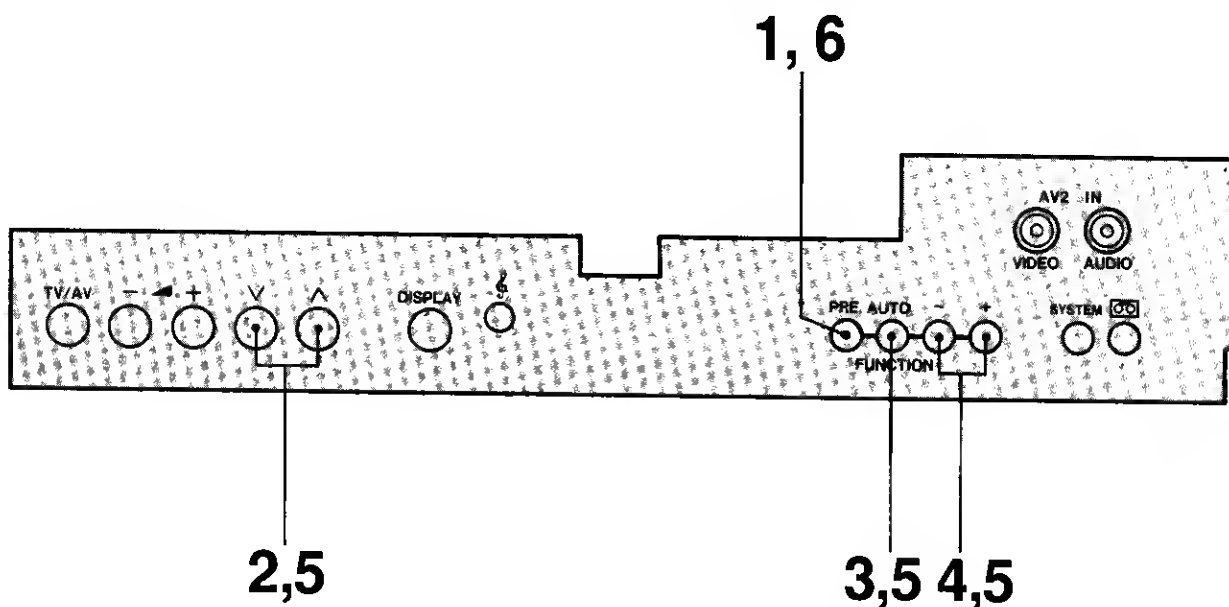
7.

Set the "Test Signal" switch to "Off" on the VCR.  
The TV is now ready to receive the RF output signal from the VCR.

## Helpful Hint

If you want the station name on the screen display together with programme position, for operation details, refer to the Name Writing operation on page 36 to 37.

# Programme Name Writing Operation



This function is used, if you want to write the Programme name on each Programme Number.

(TV set must be turned on.)

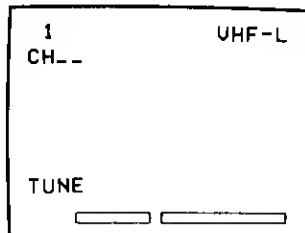
1.

PRE.

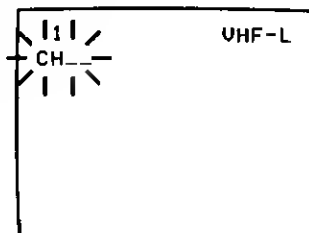


Push the "PRE." (PRESET) Button twice.  
The on-screen display will be changed as shown below.

First push

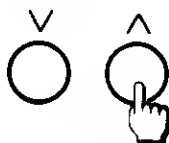


Second push



# Programme Name Writing Operation

2.



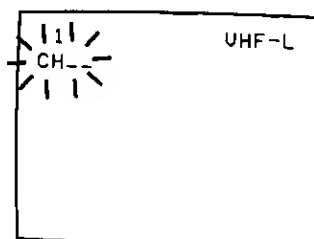
Select your desired programme number position.

3.

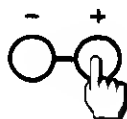


By pushing this button, you can select the one of four column as follows.

Each time this button is pressed, the next column will be selected and flashing.



4.



Select your desired character by pushing these buttons. Each time “+” Button is pushed, the character will be changed as follows.

0→1→2.....8→9→A→B.....X→Y→Z

Each time “-” Button is pushed, the character will be reverse changed.

5.

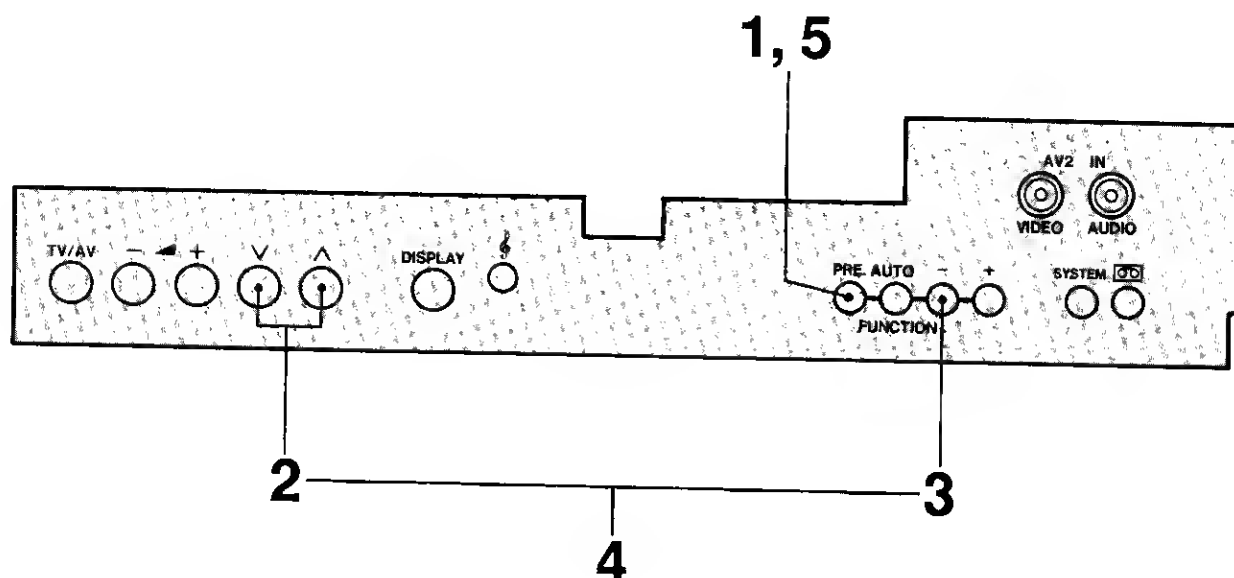
Repeat steps 2 through 4 to the remaining programme positions.

6.



After the name writing operation is finished, Push the “PRE.” (PRESET) Button twice.

# Programme Number Skip Operation



This function makes it possible to skip the programme numbers on which no TV station are tuned. This function is only effective when selecting TV station by pushing the programme number Up or Down Button either on the TV set or the Remote controller.

(TV set must be turned on.)

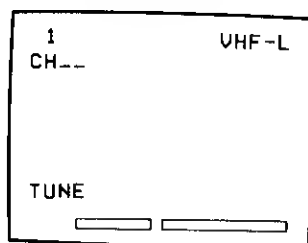
1.

PRE.

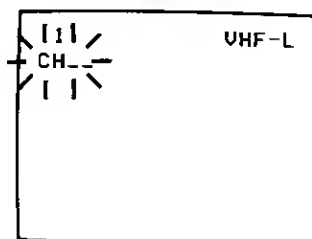


Push the "PRE." (PRESET) Button twice.  
The on-screen display will be changed as shown below.

First push



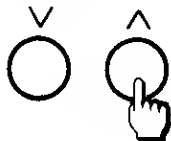
Second push





## Programme Number Skip Operation

2.

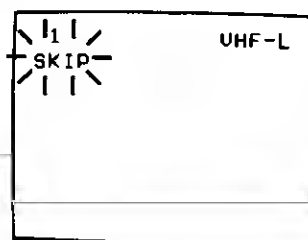
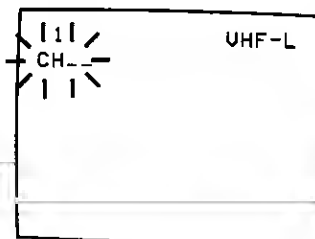


Select a programme number you want to skip.

3.



Push the “-” Button.  
The on-screen display will be changed as shown below.



The “SKIP” Indicator will be appeared.  
Then Skip function is set on a programme position.

4.

Repeat steps 2 and 3 to remaining undesired programme position.

5.



After the skip operation is finished, push the “PRE.” (PRESET) Button twice.

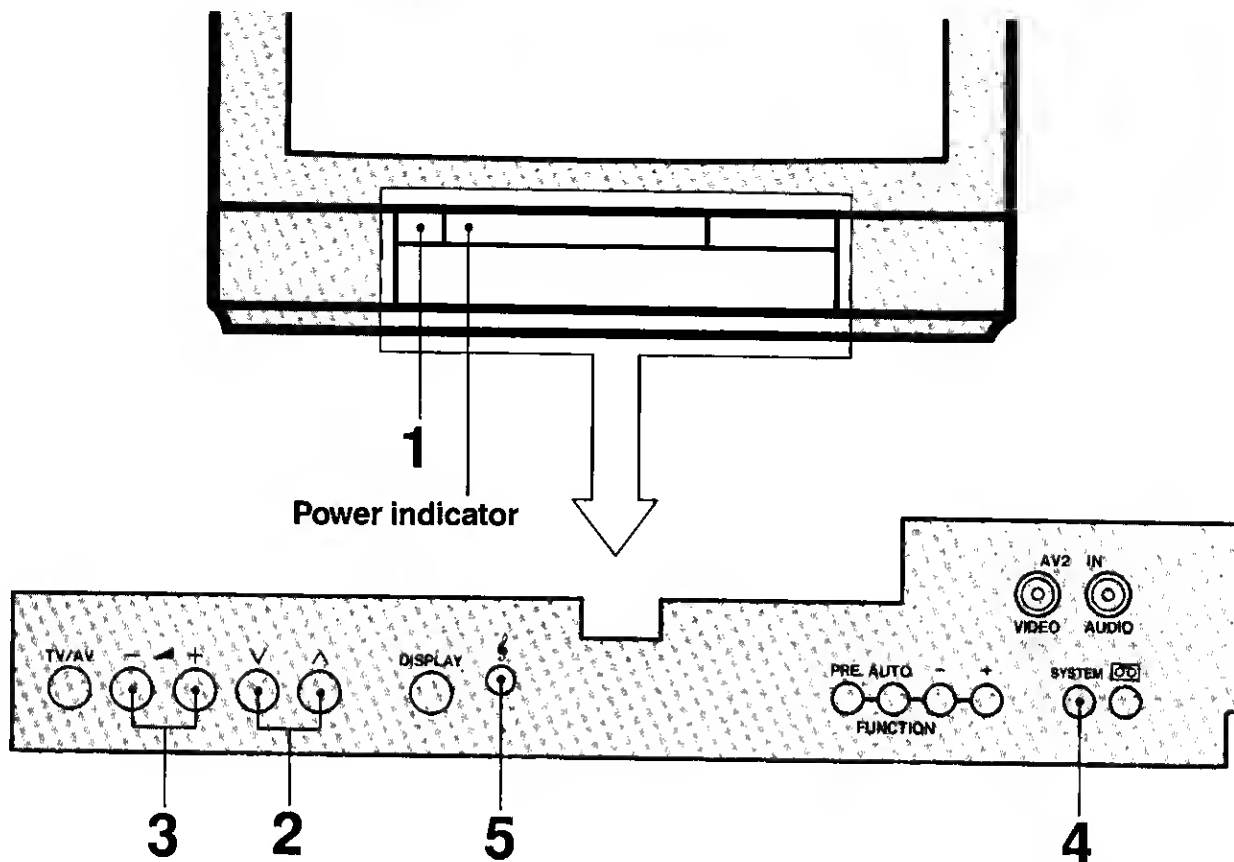
## How to cancel the skip function.

### Method:

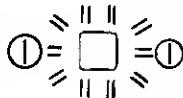
1. Push the “PRE.” (PRESET) Button twice.  
Refer to Step 1 on page 38.
2. Select the skipped programme number by using programme number “Up” or “Down” Buttons.  
Refer to Step 2 on this page.
3. Push the “-” Button.  
The on-screen indicator will be changed from “SKIP” to “- - - -”.  
Then skip function will be canceled.
4. Repeat steps 2 and 3.
5. Push the “PRE.” (PRESET) Button twice.

# Basic Operation on the TV Set

Setting TV stations as follows



1.

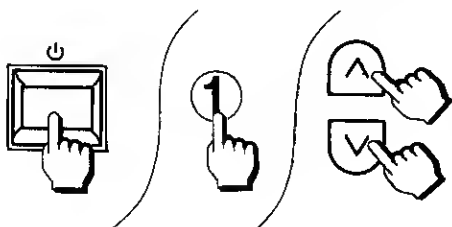


## Power on/off operation

Push the "Power Switch" to turn the TV set on.  
Power indicator will light up.

If the on-screen display does not appear, then push the Programme Number "Up" or "Down" Button on the TV set.

Push the "Power Switch" again to turn the TV set off.

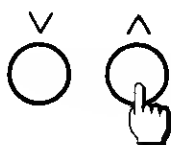


## Note:

In the stand-by condition, it is able to turn the TV set on by pushing the "Power (Stand-by)" Button, digit. "Direct Programme Number Selection" Buttons (0—9) and Programme Number Up and Down Buttons on the remote controller.

# Basic Operation on the TV Set

2.

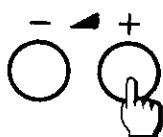


## Programme Number Up/Down Operation

Push the Programme Number Up “^” Button to select the higher programmes.

Push the Programme Number Down “v” Button to select the lower programmes.

3.

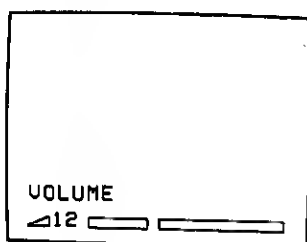


## Volume Up/Down Operation

The sound level can be adjusted in steps.

Push the Volume Up “+” Button to increase the sound level.

Push the Volume Down “-” Button to decrease the sound level.



On-screen display will appeared as shown left.

4.

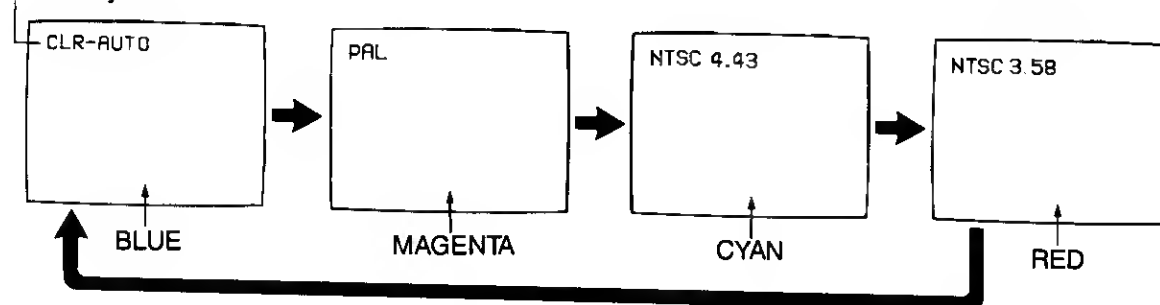
SYSTEM



## System Select Button

This Button is used only AV mode. Normally, the System Switch is automatically set to the Auto Mode on the AV mode. If the clear picture cannot be obtained even when the AV signal is received, push the “System” Button repeatedly until the optimum image can be produced. The Colour Back will be changed as shown below.

Colour System



5.

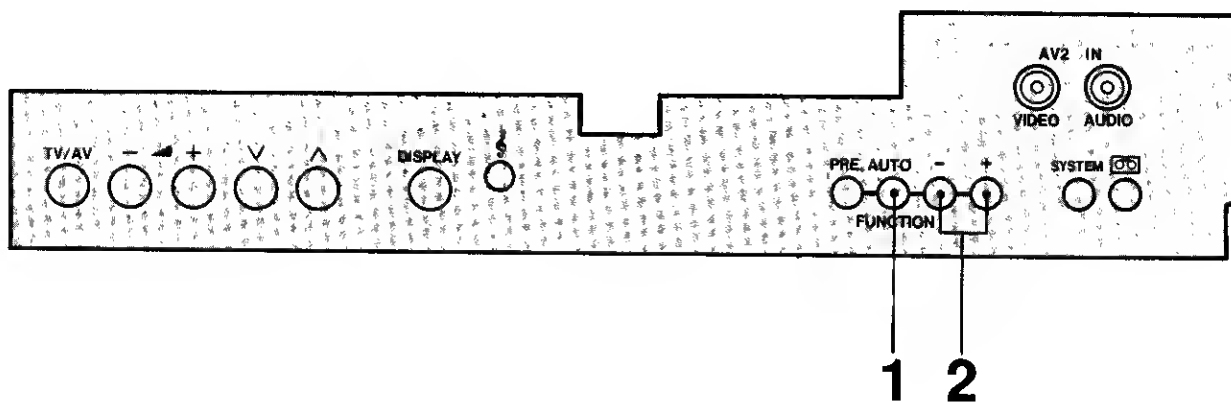


## Tone Control

Turn this control to adjust for the desired sound tonal quality of the sound.

# General Operation on the TV Set

## Picture Control



Picture have been set according to a factory-preset levels.

You can change these setting according to your desired level.






However you can change only last function menu on before standby enabled. When you want to set the other menu, use the "Picture Menu" Button on the remote controller.

1.



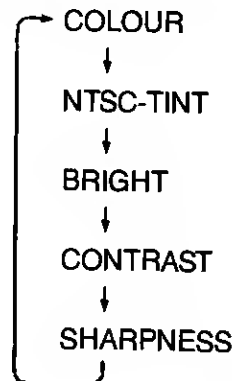
By pushing the "Auto Function" Button, the on-screen display will appear.

# General Operation on the TV Set

PICTURE1 (STANDARD)	
	32 COLOUR
	32 NTSC-TINT
	32 BRIGHT
	40 CONTRAST
	32 SHARPNESS

By pushing the "Auto Function" Button sequentially, the on-screen display will be changed as shown left.

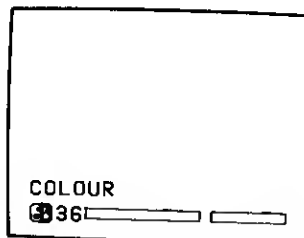
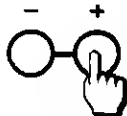
Select the desired function.



**Note:**

NTSC-TINT indicator when the system button on AV mode to select the "NTSC4.43" or "NTSC3.58", "NTSC-TINT" indication will be displayed on the screen.

2.



(e.g. Selecting the "COLOUR" function)

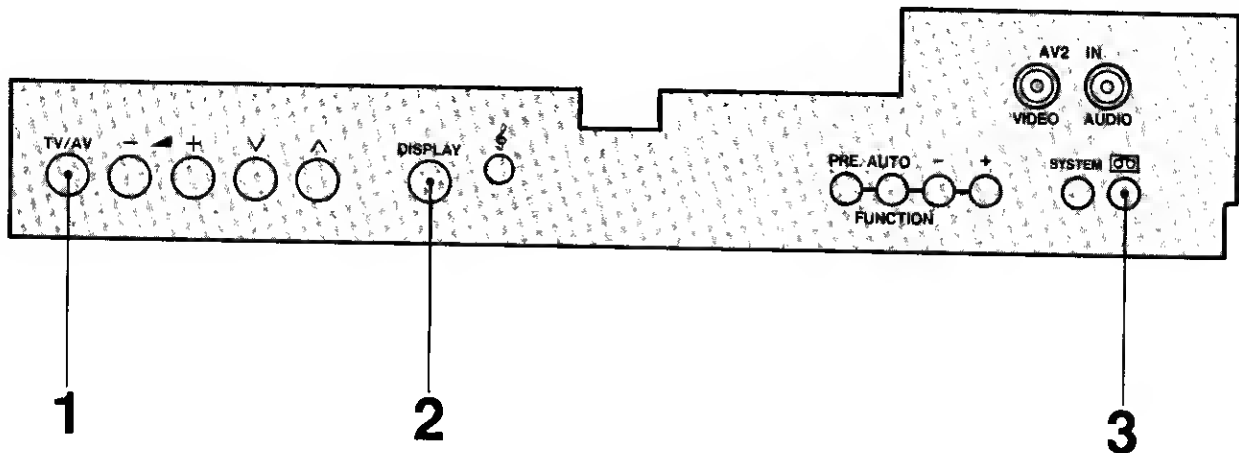
By using the Level Adjust Up "+" or Down "-" Button, the on-screen display will be changed the level indicator as shown left.

Push the "+" Button to increase the level of selected function.  
Push the "-" Button to decrease the level of selected function.

3.

Repeat steps 1 through 2 to the remaining functions.

# General Operation on the TV Set



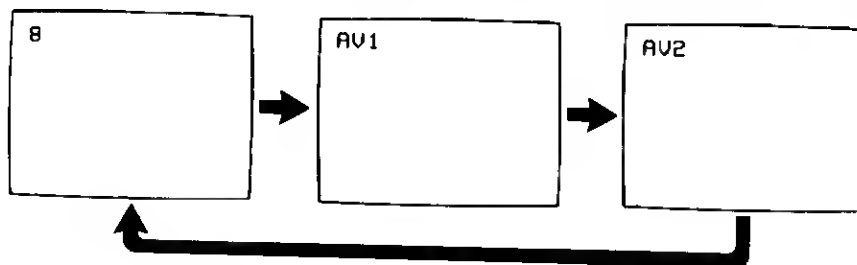
1.



## AV modes (AV1 and AV2) Select Operation

Push the "TV/AV" Button to select the TV and two AV modes (AV1 and AV2).

By pushing this Button, on-screen will be changed as shown below.



### Note:

- (1) When AV mode (AV1 and AV2) is selected and the selected AV mode has no AV signal, the On-screen will be changed from Black out picture to Colour back picture.
- (2) When TV mode is selected, the last programme number on before standby will appear on the screen.

# General Operation on the TV Set

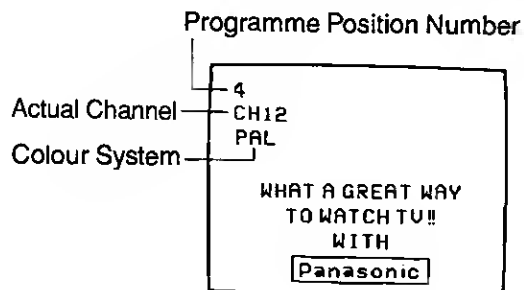
2.

DISPLAY



## Display Button

Push the "Display" Button, the on-screen display will appear as shown below.



### Note:

When this button is pushed, the Picture menu will change to Picture 2. And each level of Picture 2 will be changed to the Normal mode. For Picture menu details, refer to Picture Operation on page 48 through 49.

Push again the "Display" Button, the on-screen display will disappear.

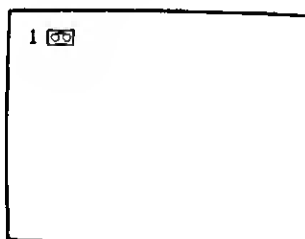
3.



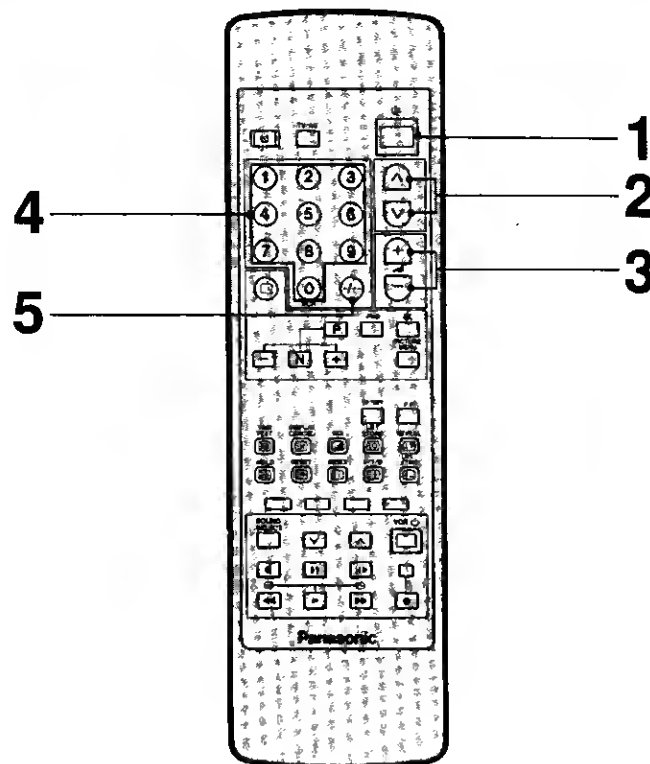
## Game Position Button

By pushing the "Game Position" Button, reproduction of irregular signals such as certain TV games and rental video tapes will be improved.

This function is effective when the RF IN Terminal is connected. The "Game Position" indicator will be appeared as shown below.



# Basic Operation on the Remote Controller



The Remote Control can only be used when the "Power" Button is in the on condition.  
(The Power indicator on the TV set light up)

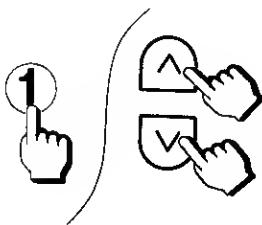
1.



## Power (Stand-By) Button

Push this button to turn the TV set on.

Push it again to turn the TV set off.



It is able to turn the TV set on by pushing the digit, "Direct Programme Number Selection" buttons (0-9) and the "Programme Number Up and Down" Buttons.

## Note:

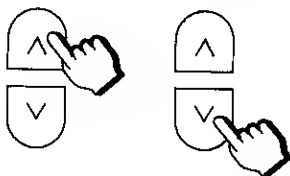
Do not leave the TV set in the stand-by condition for a long period of time.

It is better to switch it off when you are away for extended period of time.



# Basic Operation on the Remote Controller

2.

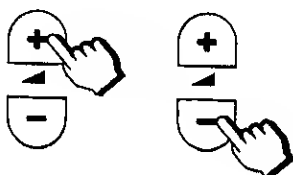


## Programme Number Up/Down Button

Push the Programme Number Up “^” Button to select the higher programme numbers.

Push the Programme Number Down “v” Button to select the lower programme numbers.

3.



## Volume Up/Down Button

Push the Volume Up “+” Button to increase the sound level.

Push the Volume Down “-” Button to decrease the sound level.

4.



## Direct Programme Number Selection Buttons

One digit programme number  
(Programme numbers 0-9)

You can select the numbers 0 to 9 directly.

e.g. Selecting number “7”  
Push the “7” Button.

5.



Two digit programme number  
(Programme numbers 10-29)  
e.g. Selecting number “24”

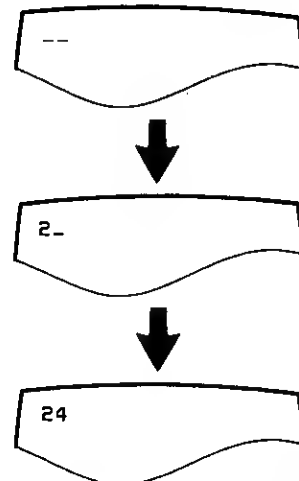
Push the “-/-” Button.  
The on-screen will be displayed as follows.



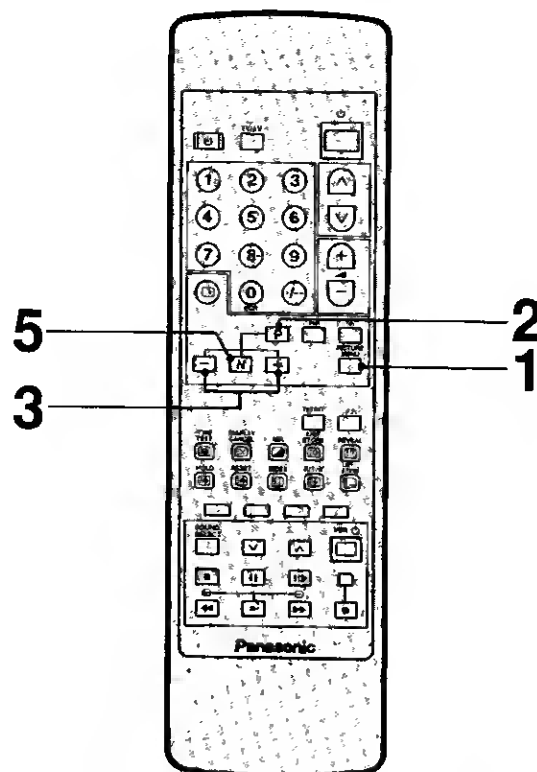
Push the “2” Button.



Push the “4” Button.



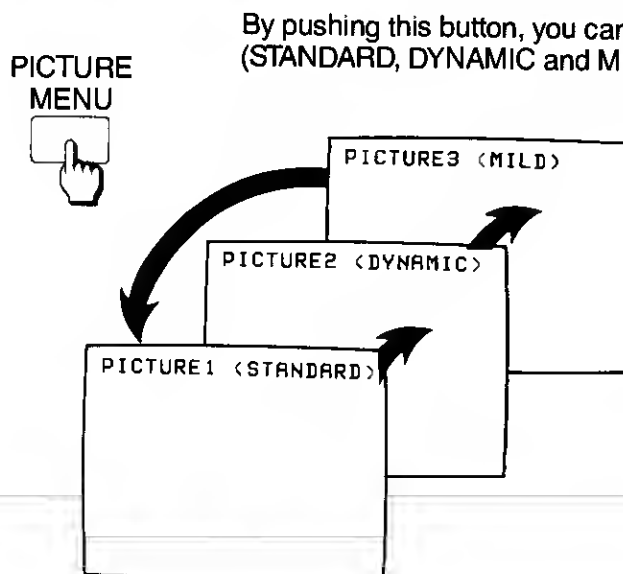
# Picture Menu Operation



3 menus can be selected to match the TV with the watching environments and/or the visual softwares.

"COLOUR", "NTSC-TINT", "CONTRAST", "BRIGHTNESS" and "SHARPNESS" are memorized into each menu; letting you tailor the visual effect of your favorite picture.  
(The level is preset at the factory.)

## Menu select operation



By pushing this button, you can sequentially select three picture menu (STANDARD, DYNAMIC and MILD), as shown below.

### PICTURE 3 (MILD)

For watching at moderately dark places. It is set at pictures where consideration is given to dark scenes.

### PICTURE 2 (DYNAMIC)

For watching at bright places, it is set at modulated picture where contrast effect is strongly felt.

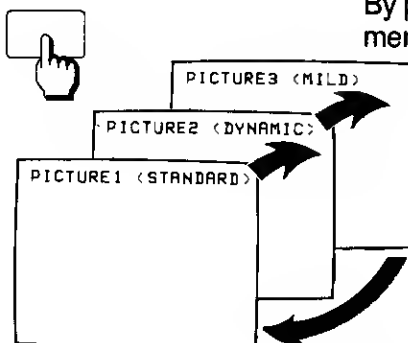
### PICTURE 1 (STANDARD)

For watching at standard brightness, it is set at standard picture.

# Picture menu operation

## To Adjust the Picture menu

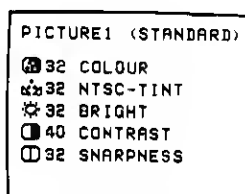
### 1. PICTURE MENU



By pushing this button, you can sequentially select three picture menu as shown below.

For each picture menu, the function levels shown below can be adjusted.

### 2.



Select your desired function, By pushing the "P" Button sequentially, the on-screen display appears as shown below.

COLOUR → NTSC-TINT → BRIGHT → CONTRAST  
SHARPNESS

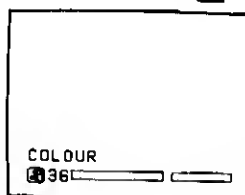
#### Note:

NTSC-TINT indicator.

When the system button on AV mode to select the "NTSC4.43" or "NTSC3.58", NTSC-TINT" indication will be displayed on the screen.

(e.g. Selecting the "PICTURE 1" menu)

### 3.



(e.g. Selecting the "COLOUR" function)

By pushing the "+" Button or "-" Button, the on-screen display will be changed the level indicator as shown left.

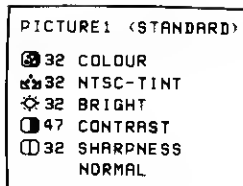
Push the "+" Button to increase the level of selected function.  
Push the "-" Button to decrease the level of selected function.

### 4.

Repeat steps 1 through 3 to the remaining picture menu.

## Helpful Hint

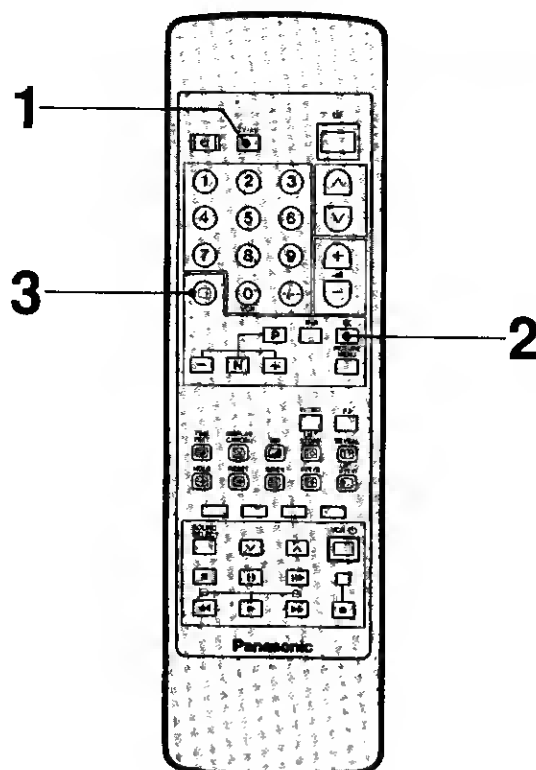
### 5.



By pushing this button, the selected menu will be changed to the Normal mode.

The on-screen will appears as shown below.

# General Operation on the Remote Controller

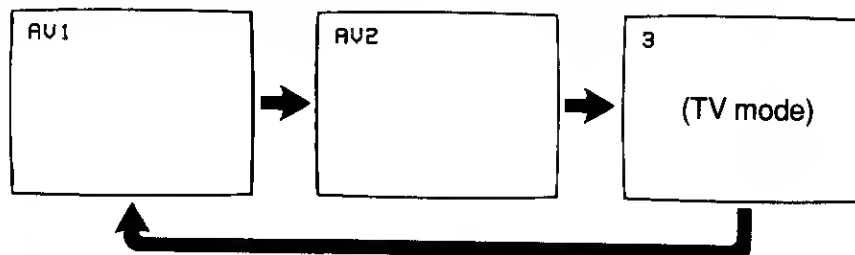


1.



Push the "TV/AV" Button on the Remote Controller.  
Then last selected AV mode will be displayed on the screen.

By pushing this button, you can sequentially select TV and two AV modes as shown below.



**Note:**

When AV mode (AV1 and AV2) is selected and the selected AV mode has no AV signal, the on-screen will be changed from Black out picture to Colour back picture.

# General Operation on the Remote Controller

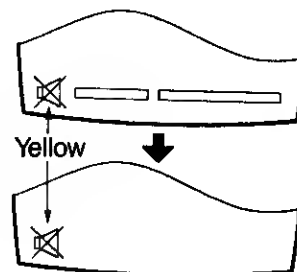
2.

Push the "Mute" Button to mute the sound.



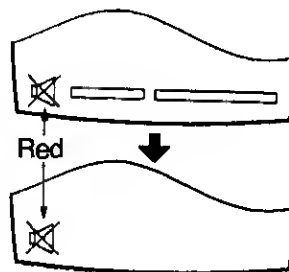
Push this button once to mute the sound 50%.  
The on-screen display will appear as follows.  
The previous sound level will appear in yellow.

The "Mute" symbol will be remained.



Push this button again to mute the sound perfectly.  
The previous sound level will appear in red.

The "Mute" symbol will be remained.



Push this button once again to restore the previous sound level.



**Note:**

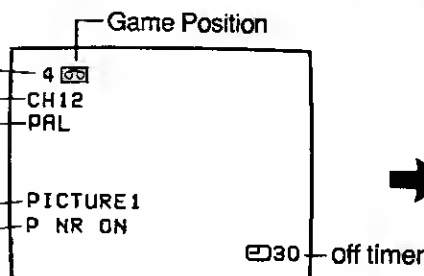
In the "Mute" condition, you can use the Volume "Down" Button.  
Using the Volume "Up" Button, the "Mute" will be canceled.

3.

Push the "Recall" Button to activate the on-screen display as shown below.



Programme Position  
Number  
Actual Channel  
Colour System



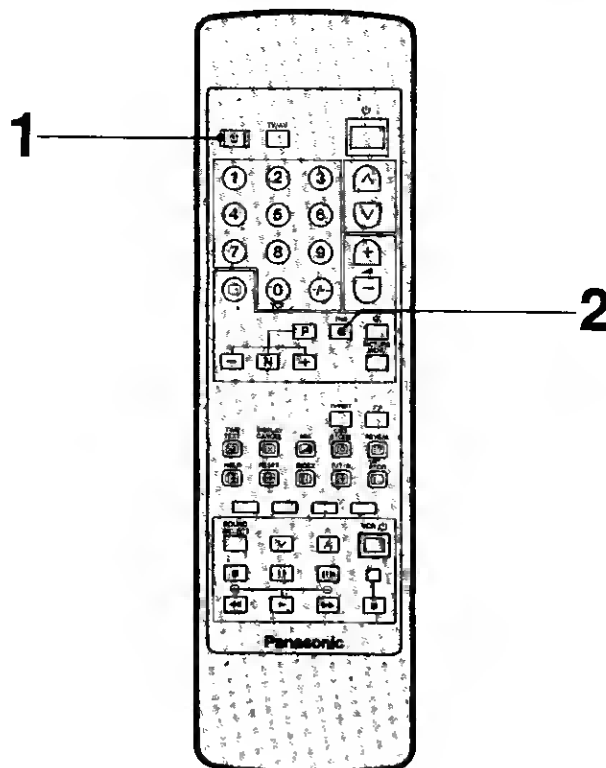
The Programme  
Number and Actual  
Channel will be  
remained.

Picture menu  
PNR on or off



Push again to cancel.

# General Operation on the Remote Controller



1.

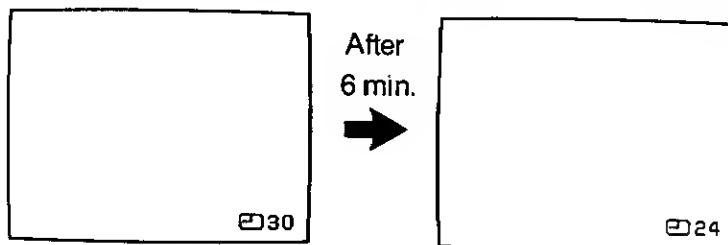


## Off Timer Button

The TV set may be pre-set to switch off after a fixed period. Pushing the "Off timer" Button will set the TV for 30 minutes. To set 60 minutes, push this button again, and again for 90 minutes. Pushing this button once more will return the Pre-set time to zero.

30 → 60 → 90 → 0

When a time for switch off has been set, the pre-set time will be displayed as follows. (e.g. setting for 30 min)  
The on-screen display will disappear automatically. To confirm the rest time, push the "Recall" Button and the rest time is displayed on-screen.



# General Operation on the Remote Controller

**Note:** Pre-set time may be cancelled in the following ways.

- 1: Set the Pre-set Time condition to "0" using the "Off timer" Button.
- 2: Turning the TV set off, using the "Power" Button on the Remote Controller or the "Power" Button on the TV set.  
When it will be 3 minutes before the time for switch off, the display of rest time will begin to flash.

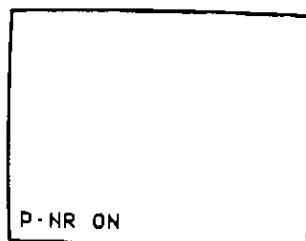
2.



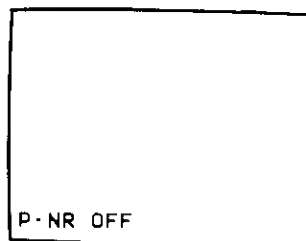
## Picture Noise Reduction Button.

The Picture Noise Reduction system is a system designed to effectively reduce the Picture Noise.

The on-screen display will be appeared as follows.



The Picture Noise Reduction is ON condition.  
The Picture Noise will be soft.



The Picture Noise Reduction is OFF condition.  
The Picture Noise will be sharp.

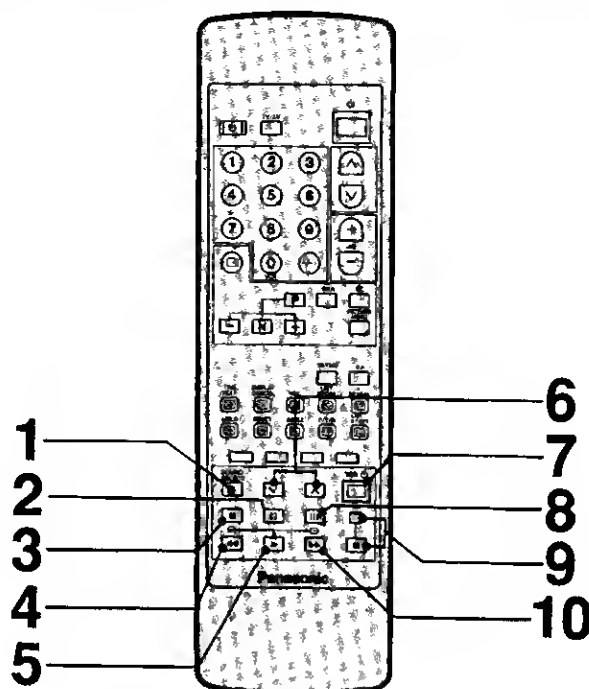
On the channel of the weak broadcasting signal or no signal, the on-screen will be Blue back picture and the noise will be muted automatically.

## Note:

When you want to watch the weak broadcasting in spite of the disturbance, turn the Picture Noise Reduction to ON condition. Then the TV will be able to receive the weak broadcasting.

# Operation for VCR

This infrared remote control is designed specifically to be used with selected Panasonic/National VCRs. Some model VCRs have different functions, so please refer to the individual instruction booklet to ensure compatibility when using this remote control with Panasonic/National VCRs, consult your dealer for details.



1.



## Sound select Button for VCR

You can select the Sound mode (Stereo or Bilingual), by pushing this button.  
Sound select operation details, refer to operating instructions of the VCR.

2.



## Pause/Still Button

Push to stop the tape temporarily during playback.  
A still-picture will be shown.

3.



## Stop Button

Push this button to stop the tape.

4.



## Rew (Rewind)/Review Button

Push this button to rewind the tape.  
During the playback mode, holding this button down will allow you to view the picture in reverse rapidly. (Review)



# Operation for VCR

5.



## Play Button

Push this button to playback the tape.

6.



## Programme Number Up and Down Buttons for VCR

Push the Programme Number "Up" or "Down" Button to select a programme position which you want to tune to a TV station.

7.



## VCR Power Button

Push this button to turn the VCR on.  
Push again to turn off.

8.



## Still Advance Button

While in the still mode, push this button to advance the picture one frame at a time.

9.



## Rec (Record) Buttons

Recording is started by pushing these 2 buttons at the same time.

10.

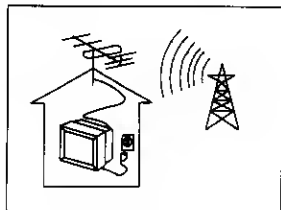


## FF (Fast Forward)/Cue Button

Push this button to fast forward the tape.

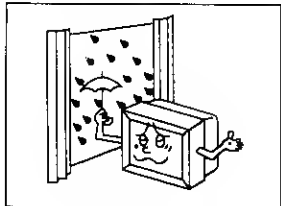
During the playback mode, holding this button down will allow you to view the picture in the forward direction rapidly. (Cue)

# Warnings and Cautions

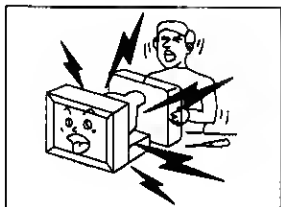


## Power Source and TV System

This TV set can be operated on AC 230 V, 50 Hz.  
It is designed exclusively for broadcast systems PAL B.G.

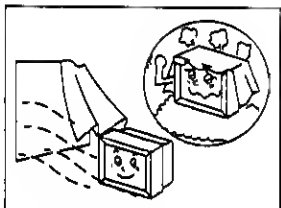


To prevent damage which may result in fire or electrical shock hazard, do not expose the TV set to rain or excessive moisture.

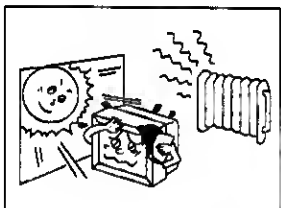


## High Voltage:

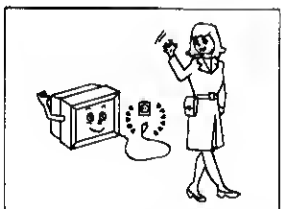
Do not remove the rear cover as live parts are accessible when it rear cover is removed.



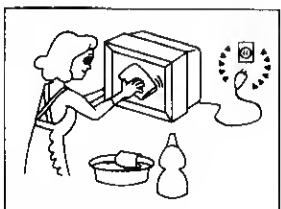
Adequate ventilation is essential to prevent failure of electrical components.



Avoid exposing the TV set to direct sunlight and other sources of heat.

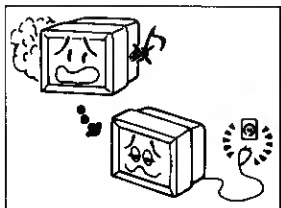


Remove the plug from the wall outlet (Power point) when the TV set is not used for a prolonged period of time.



## Cabinet and Picture Tube Care

The cabinet and picture tube can be kept in good condition by simply wiping with a clean, soft cloth moistened with mild detergent and water. Do not use solutions containing benzol, petroleum or a chemical cloth. For safety, remove the plug from the wall outlet.













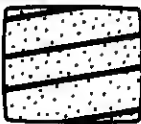









Do not use this set if abnormal operation occurs.

Ex : Smoke, odd sounds, or smells Turn the power switch off and disconnect the AC plug, if you notice any unusual operation.

# Troubleshooting

Before you call for service, determine the symptoms and make a few simple checks as shown below.

Symptoms		Checks
Picture	Sound	
 Snowy Picture	 Noisy Sound	Aerial Location, direction or Connections
 Multiple Image	 Normal Sound	Aerial Location, direction or Connections
 Interference	 Noisy Sound	Electrical Appliances Cars/Motorcycles Fluorescent Lamps
 Normal Picture	 No Sound	Volume (Check whether the mute function has been activated on the Remote Control.)
 No Picture	 No Sound	Not plugged into AC outlet Not switched on Contrast and Brightness/Volume setting (Check by pushing the Power Switch or Stand-by Button on the Remote Control.)
 No Colour	 Normal Sound	Colour Control
 Scrambled	 Normal or Weak Sound	Retune Channels
 Coloured Patches	 Normal Sound	Magnetic interference from unshielded equipment Receiver moved while "ON" (Power switch off for 10 mins.)
   No Colour    Rolling Picture    H-Line	 Noisy Sound	System Button

# Specifications

## Power Source

AC 230 V, 50 Hz

## Power Consumption

125W  
Stand-by condition 9W

## Receiving System

4 Systems		Function
1	PAL B, G	Reception of broadcasts and Playback from Video Tape Recorders
2	NTSC 4.43/5.5MHz	Playback from Special Video Tape Recorders
3	NTSC 3.58/5.5MHz	
4	PAL 60Hz	

## Receiving Channels

Regular TV    **VHF BAND**  
1-11

**UHF BAND**  
21-69

# Specifications

## Tuning System

Voltage synthesized

## Picture Tube

21 inches (54 cm) measured diagonally  
90° deflection

## Audio Output

Internal Speaker 2.5W (10% distortion), 3W (Max.)

## Aerial Impedance

75Ω Unbalanced coaxial

## Video/Audio Terminals

AV1	S-Video In	Y: 1.0 Vp-p, 75Ω C: 0.3 Vp-p, 75Ω
	Video In	1 Vp-p, 75Ω
	Audio In	Approx. 400mV
AV2	Video In	1 Vp-p, 75Ω
	Audio In	Approx. 400mV
Monitor Out	Video Out	1 Vp-p, 75Ω
	Audio Out	Approx. 400mV

## Accessories Supplied

Remote controller × 1  
R6 Battery × 2

## Dimensions (W × D × H)

510 mm × 487 mm × 475 mm

## Mass (Weight)

22.5 kg (Net)

### Note:

Design and Specifications are subject to change without notice.  
Weight and Dimensions shown are approximate.

### Customer's Record

The serial number of this product can be found on its rear cover. You should note the serial number of this unit in the space provided below and retain this book as a permanent record of your purchase to aid in identification in the event of theft or loss.

Model Number **TC-21T1Z**

Serial Number \_\_\_\_\_

---

**Matsushita Electric Industrial Co., Ltd.**

Central P.O. Box 288, Osaka 530-91, Japan

Printed in Japan  
S1190